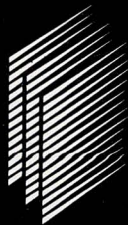


PROFESSIONAL DRAW 2.0



GOLD DISK

49553

Professional Draw

Version 2.0

*Advanced Design
& Illustration Software*

Printed in Canada

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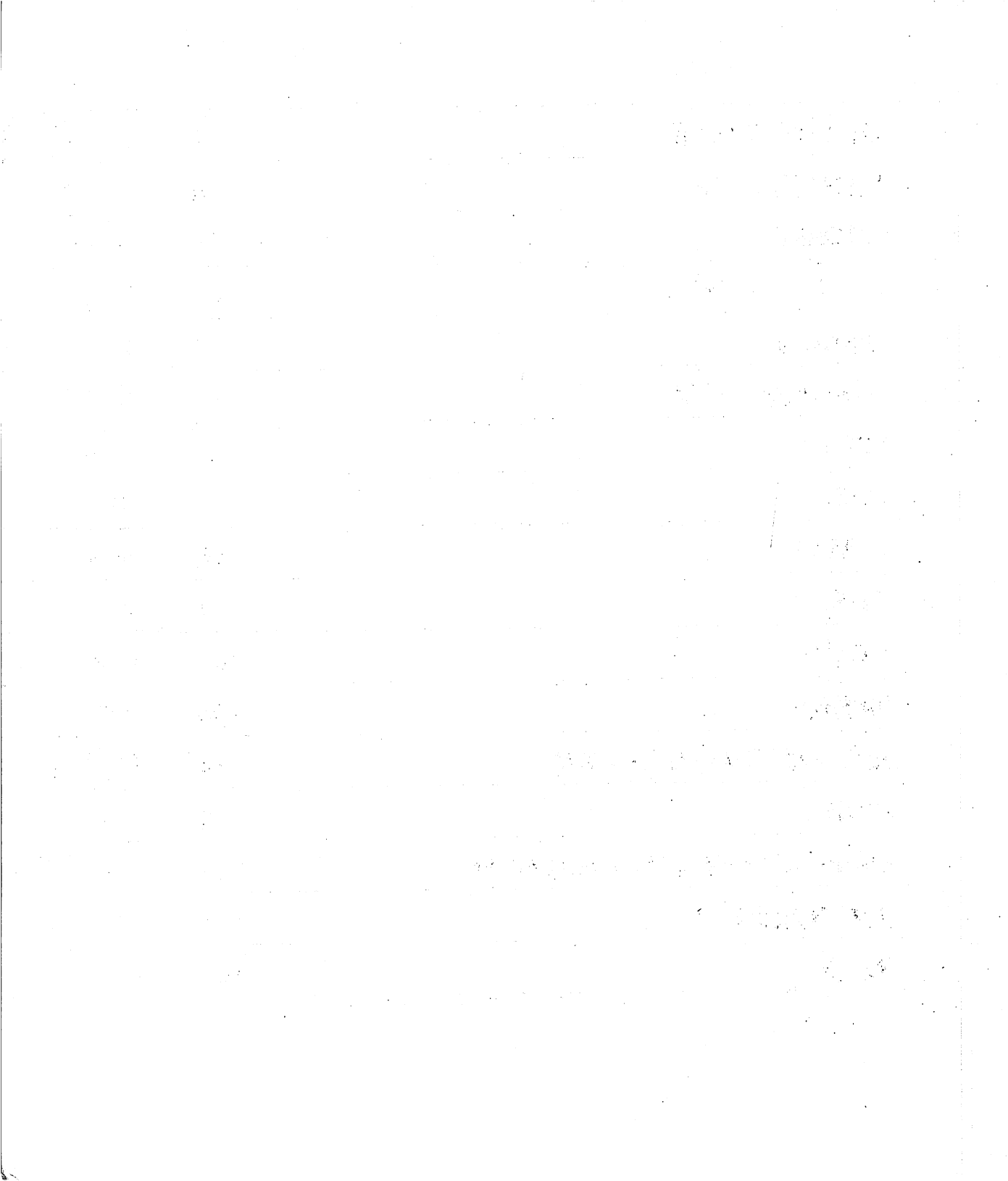
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1. GETTING STARTED

Contents of the *Professional Draw* Package

Please check to ensure that you have received a complete *Professional Draw* package consisting of the following:

- This Manual
- A Registration Card
- A *Professional Draw* Program Disk
- A *Professional Draw* Fonts and Utilities Disk

Registration

Please complete your registration card and return it to *Gold Disk Inc.* as soon as possible. As a registered owner of *Professional Draw* you are entitled to many benefits including:

- Technical Support. Registered *Professional Draw* owners receive free technical assistance through the *Gold Disk* Technical Support Department (See *Appendix A: Technical Support Information*).
- Program upgrades. *Professional Draw* is constantly being enhanced and improved through on-going version upgrades. If a new upgrade becomes available within three months of your purchase, the new version will be sent to you automatically, free of charge. New upgrades released after the three month period will also be made available for a nominal fee.

System Requirements

Computer:

Professional Draw is designed to work on any properly configured Amiga.

Operating System:

Kickstart 1.2 or higher. Workbench 1.3 or higher.

Memory Requirements:

A minimum of 1 Megabyte of memory is required.

Display Monitor:

Any Amiga compatible monitor. If working in high resolution mode, a long persistence monitor is ideal. Flicker-reducing, tinted screens are also available for standard Amiga monitors.

NOTE: Professional Page must be run in "Workbench" mode when used in conjunction with the A2024 or Moniterm monitors in order to take full advantage of the extended resolution these devices provide.

Disk Drives:

One Amiga 3.5" floppy disk drive is required. A hard drive is recommended.

Output Device:

Professional Draw outputs to all Preferences printers, Postscript devices, and HPGL plotters.

Conventions Used in This Manual

The *Professional Draw* manual and the software it describes follow the standard Amiga user interface. It is assumed that you have some familiarity with basic Amiga procedures. However, as a refresher, we recommend that you read the following conventions adhered to throughout this manual.

- Bullets (•) indicate related information, lists, or sequences.
- The use of Amiga hierarchy of terms for pull down menus. Main menus are called "menus", options in a menu are called "items", and options in sub-menus are called "sub-items". The terms "requesters", "gadgets", and "tools" are also used.
- Italic type is used for words or phrases referring to specific

Professional Draw menus, requesters, and tools. Some examples: the *Project* menu, *File* requester, *Curve* tool.

- Menu selections are often listed in this manual using the format: Menu/Item/Sub-item. For example, *Page/Alter/Default* refers to the *Default* sub-item in the *Alter* item of the *Page* menu.
- Keyboard equivalents are graphically depicted in the pull-down menu displays. Where keyboard equivalents are indicated, the following notation is used (where "x" is a specific character):
- A x - Depress x while holding the RIGHT AMIGA key.
- The COURIER font indicates text that you should type in via the CLI or in the text line of a requester.
- Moving the mouse pointer to a desired location, pressing and quickly releasing the left button is called "clicking". If this is done in order to activate an object, it is sometimes referred to as "selecting".
- Placing the mouse pointer on a desired location, pressing the left button and holding it down while moving the mouse is referred to as "dragging".

Making a Working Copy of *Professional Draw*

We recommend that you do not use the original disk which you received in the *Professional Draw* package other than to make a working copy. Immediately make one (1) back-up copy of the disk to use as your working disk. Store the original *Professional Draw* disks in a safe place, retrieving only to make additional replacement copy if your backup disk is lost or damaged.

For your convenience, *Professional Draw* is not copy-protected. Please respect the fact that *Gold Disk Inc.* has made it easy for you to make an authorized back-up to prevent risk to your original disk. Do not sell, lend, give, or otherwise distribute the *Professional Draw* program to anyone. Please read the *Gold Disk Program License Agreement*.

Making a Back-up

With one drive:

- Boot up with the *Workbench* disk that came with your Amiga. Then put your *Professional Draw Program* disk in the drive.

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Be sure that it is write-protected.

- Select the *Professional Draw* disk icon.
- In the *Workbench* menu, select the *Duplicate* item, then follow the instructions the Amiga provides.

With two drives:

- Boot up with the *Workbench* disk that came with your Amiga. Place the *Professional Draw Program* disk in the first drive, and a blank disk in the second drive. Be sure that the *Professional Draw Program* disk is write-protected.
- Move the mouse pointer over the *Professional Draw Program* disk icon and "grab" the icon by pressing and holding down the left mouse button.
- Still holding down the left mouse button, drag the *Professional Draw* icon over on top of the icon for the blank disk, and release the button.
- Your Amiga will provide the necessary instructions to complete the back-up copy.
- After the Program disk copy is finished, you should rename the copy of *Professional Draw* from "Copy of *Professional Draw*" to "*Professional Draw*".
- Repeat the same procedure for the *Professional Draw* Fonts and Utilities disk.

Starting *Professional Draw*

From the Workbench:

- Insert the *Professional Draw* Program disk in the drive to boot the system.
- Double click on the *Professional Draw Program* disk icon to bring up the *Professional Draw* window.
- Double click on the *Professional Draw Program* icon to start the program.

From the CLI

- Insert the *Professional Draw* Program disk in the drive to boot the system.
- Open up a CLI by double clicking on the CLI icon in the system drawer.
- Type `run pdraw:pdraw` in the CLI

2. INTRODUCTION

Professional Draw is a powerful, color structured graphics drawing program that produces high-resolution output on any device from PostScript laser printers and imagesetters to dot matrix printers. It is designed to satisfy the demanding requirements of professional graphic artists, yet be friendly enough for the novice to tap its potential.

Professional Draw brings the power of the Amiga to the artist. Through such features as scaling, rotating, blending, cloning, distorting and wrapping text along curves, you can have the computer instantly do what you might have spent hours doing. You can build libraries of clip art on disk that may be dropped into current drawing at any time. You'll be able to produce more with less hassle. Finally, you can import *Professional Draw* clip files into *Professional Page* documents.

Professional Draw provides full support of color, complete with the generation of process and mechanical color separations. *Professional Page*, Gold Disk's desktop publishing system, became the first publishing product on a personal computer to provide this capability, and *Professional Draw* broadens that innovation.

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Last, but not least, creating with *Professional Draw* is just plain fun. It doesn't get in the way of your creativity; it enhances it.

About Illustrations

"A picture is worth a thousand words" the old saying goes. *Professional Draw* lets you capitalize on that equation by providing the tools that let you produce art quickly and interactively. The mouse and menu interface provided by the Amiga ensures that you will spend your time creating -- not struggling with arcane commands and technobabble.

The images produced with *Professional Draw* consist mainly of "line art" for inclusion in such publications as magazines, newspapers, newsletters, books, posters, technical documentation, leaflets, brochures, reports... anywhere an eye-catching graphic is desired. *Professional Draw* goes one step further than other packages: it will also let you include bitmap graphics in your images.

Line art can be as simple as a rule to separate two columns of text or as elaborate as an architectural drawing. Add color, and another dimension of communication opens up. You have only to look at publications like *Macleans* or *USA Today* to see how more and more publications now use color line art to condense a lot of information into a visual that can quickly convey the essence of a complex situation.

The ability to trace over a digitized image in *Professional Draw* provides a means to incorporate graphics created in other media into a desktop publishing system. Logos, schematics, charts, and illustrations can be printed without a loss of detail and without "the jaggies" associated with bitmap images.

Another powerful feature provided by *Professional Draw* is the ability to manipulate text. You can now treat headlines more as graphics than as strings of words: tilt them, mirror them, size them, distort them, and have them follow a curved path, then print them in multiple colors.

Whatever you chose to do, you'll know that what you see on your screen is what you'll get from the printer, for *Professional Draw* provides a display that closely matches what will come out of the imagesetter machine, laser or dot-matrix printer.

Structured Drawings vs Bitmaps

Professional Draw produces structured graphics, rather than bitmap graphics. Bitmap graphics are like photographs reproduced in newspapers. From a distance, they appear to be continuous tone images but when you examine them closely, you see that they actually consist of thousands of tiny dots.

Computer graphics like the ones you see on television used for opening credits and company logos, are usually constructed the same way. They are made up of thousands of lines containing thousands of colored dots, called pixels (short for picture elements), that make up the image.

Structured graphics programs use a different approach. Rather than breaking up an image into thousands of tiny dots, they organize it into basic structures based on such geometric elements as lines, curves, ellipses and rectangles. They produce a *description* of an image rather than the image itself, and leave it to the output device to draw the image from the description. In this situation, the only limit to resolution is in the output device itself.

Here is another way to look at Bitmaps and Structured Drawings. Imagine a line drawn by mosaic tiles; as you rotate this line you will see that it takes on a stair-step appearance. When you magnify this line the tiles get larger and the stair-steps, "jaggies" become more pronounced. When we define the same line as an elastic string with two end points, the string remains straight as we rotate the end points, and magnifying the line does not produce any "jaggies".

About *Professional Draw*

Professional Draw, like its sister program, Gold Disk's *Professional Page*, is page-oriented and, in fact, uses a very similar

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interface to the latter program -- users of *Professional Page* will feel right at home.

In most cases, you will be drawing and printing individual pages of art. But *Professional Draw* provides many other ways of organizing your artwork. Many pages of drawings at once can be stored, loaded and printed as a *folio*. Alternatively, single drawings, even pieces of drawings, can be managed: either as individual components called *objects* or as libraries of clip art called *clips* collected for particular illustration applications.

The ability to build libraries of clips, and to incorporate clips easily into your work, is particularly important to productivity with *Professional Draw*. For a magazine, for example, you could build up a library of all the headlines and art for the various departments. For technical illustration, you could build a library of electronic components and use *Professional Draw*'s extensive editing features to integrate them into your drawings with the precision such work demands.

Professional Draw provides a variety of drawing tools for creating structured illustrations: these include a *Pen* tool for Bezier curves and straight lines; an *Ellipse* tool for ellipses and circles; and a *Rectangle* tool for rectangles and squares. All drawing and editing is done with the mouse and menus; a few keys are also employed for such options as angle constraints and extended select. A mouse-emulating drawing tablet such as the *Easyl* tablet from Anakin Research can also be used.

Professional Draw can also input and output drawings in *Encapsulated PostScript Format* (EPSF). PostScript is a page description language developed by Adobe Systems and is now in broad use on a variety of output devices.

What EPSF means for you is compatibility with all of the output devices that have a PostScript interpreter in them. This now includes a broad line of laser printers, and imagesetting machines. EPSF also means that you can import your *Professional Draw* art

into other personal publishing systems that support EPSF, such as Aldus's *Pagemaker* and Xerox's *Ventura Publisher*. There is, at this time, no way to display EPSF files on the screen since there is no universal EPSF display standard.

You can, of course, import any illustration created with *Professional Draw* as a structured graphic into *Professional Page*. However, this requires that you be using version 1.2 (or greater) of *Professional Page*. If you do not have this version, and you wish to import *Professional Draw* illustrations, contact Gold Disk or your dealer for the upgrade.

Within *Professional Page*, all that is required is that you first create the box on the page where you want to place the structured drawing. *Professional Page* will automatically scale and crop the illustration to fit the box.

You are not *required* to have a PostScript printer to use *Professional Draw*. It provides full support of all *Preferences* supported, graphics compatible, dot matrix printers. *Professional Draw* will use the full resolution and number of colors that the printer can provide.

Saving your illustrations

The importance of saving your work often cannot be over-emphasized. This "insurance" will pay for itself the first time you run into any difficulty. If you made a major change in an important illustration that turned out to be inappropriate or inaccurate, you will be able to recall the original version at any time. Saving files frequently will make sure you only lose, at worst, a few minutes of work, should someone trip over the power cord, for example.

Print your documents often. *Professional Draw* attempts to provide the most accurate representation of your illustrations possible on the Amiga, but it is still just that, a representation. If you print your drawing several times during its creation, your final illustration will take form more quickly and more accurately.

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Save and Save As

When you begin work, immediately save your folio using the *Project/Save as* menu item. *Professional Draw* will now save your folio to your disk.

- *Save as* requires a new file name from the user and creates a new file on the disk. Use *Save as* during your work session when you are experimenting and not sure if the next change is one you will want to keep.
- *Save* overwrites the previous file on the disk, and requires no input from the user.

See the Hints Section of the manual for file naming conventions

3. TUTORIAL

Structured drawing programs like *Professional Draw* are not intended to provide computer versions of conventional drawing tools, such as pencils, pens and brushes. These tools are used to manipulate the *medium* of a work of art.

Professional Draw's tools are designed instead to give the artist control of the *composition* of the work. Rather than viewing drawings as regions of light and shadow, of texture and color, *Professional Draw* views drawings as a collection of *structures*: lines and rectangles, curves and circles. These structures may well be colored or patterned, but these are characteristics or *attributes* of the structures rather than entities unto themselves.

The structure of a drawing can be tremendously complex but, in the world of *Professional Draw*, all drawings are created from single, elemental structures called *objects*. An object is the basic entity that you can create and manipulate in *Professional Draw*: it can be a curve, an ellipse, or a grid.

An object can also consist of other objects that have been *grouped* together. Such an object, once created, is treated by the program from then on as a single object.

This powerful concept is particularly suited to the creation of art with computers because such art becomes, in the computer's

memory, not a vast collection of colored dots but rather a *description*. As such, it has several advantages over bitmap graphics: it consumes less memory; it is often much easier to change; and, because it is a description of the art rather than a one-to-one representation of it, it is independent of the mechanism that actually draws the art. Your Amiga, for example, displays such art as an array of dots with a density of approximately 65 dpi on the screen. However, the same description sent to a laser printer, will be used to draw the picture at 300 dpi. A Linotronic 300 with a PostScript processor will draw it at 2400 dpi.

But enough theory. Let's have some fun.

To run the tutorial, you need:

- A working copy of the *Professional Draw* Program disk.
- A blank, formatted data disk.
- A suitable output device, if available.

If you are not already running *Professional Draw*, boot up the program in the following way:

- At the Workbench prompt, insert your copy of the *Professional Draw* program disk into the internal drive.
- Move the mouse pointer over the *Professional Draw* disk icon, and double click.
- Double click the *Professional Draw* program icon.

Creating a Page

While you can draw objects directly on the art board, most of your work will be done on a *page*.

Professional Draw will automatically create a single blank page when it is run, but additional pages must be created manually. So let's create one:

- Hold down the right mouse button, and the menu

strip will become visible along the top of the Amiga screen.

- Keeping the right mouse button pressed down, move the pointer to the *Page* menu (the second menu from the left). When the pointer touches the word *Page*, a “pull-down menu” appears. Still keeping the mouse button pressed down, move the pointer down to the *Create* item and release the button. This procedure is called “selecting a menu item”.
- A “requester window” appears, showing a number of adjustable settings. For the moment, leave the settings as they are, which will create a letter-sized page (8.5 in. x 11 in.). Move the pointer over the *OK* gadget in the lower left hand corner of the requester and click the left mouse button to create the page.

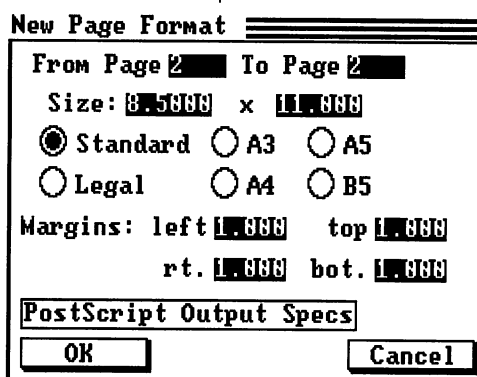
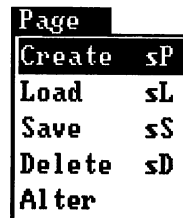
A representation of the page appears on your art board. Also displayed, at the top of the gadget strip on the right hand side of the screen, is the page number: page 2, in this case.

Keyboard Commands

The *New Page Format* requester that you just called up with the mouse and pointer can be accessed directly with a keyboard equivalent, in this case SHIFT-P. Call it up again, this time using the keyboard equivalent of the mouse command.

Hold down the *SHIFT* key and press the P key.

The *New Page Format* requester pops up again. Click the *OK* gadget at the bottom left of the requester. The page number changes to 3 (you now have three pages in memory).



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Most of the commonly used features of *Professional Draw* can be accessed with either keyboard or mouse. The mouse/pointer/pull-down menu system is the simplest and most natural way to activate *Professional Draw*'s features, especially for a novice. When you become more proficient with *Professional Draw*, and especially if you're using it in a production environment where speed is important, you may want to make more use of the keyboard equivalents. A full list of keyboard equivalents can be found in *Appendix B: Keyboard Equivalents*.

The New Page

The new page appears on the screen as a white rectangle with rulers along the top and the left side. By default, the page appears on a standard Amiga monitor screen at about 100% of its actual (printed) size, making an inch on screen approximately equivalent to an inch on paper. (Actually, because the dots that make up the screen on an Amiga are slightly taller than they are wide, the image you see on the Amiga is slightly more elongated vertically than it will appear on paper. A circle, for example, will appear slightly elliptical vertically on screen, although it will be rendered perfectly on paper.)

Saving and Opening (Loading) Your Drawings

Before you begin the next part of this tutorial, you should know how to save and load your folio. You may not want to do all of the tutorial at one sitting; saving your work will let you continue again at another time. You can save and load individual pages or several pages at once in a folio. Since we have already created two blank pages, let's demonstrate how to save them as a

folio on disk. In the next chapter, *Basic Concepts*, you will find out how to save pages.

While the *Professional Draw* program distinguishes between pages and folios, the Amiga regards them all simply as files. When we use the term file, therefore, we mean any information we can save or load on the computer's disk drives.

Saving a folio

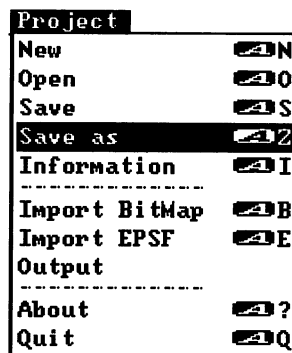
Before saving a folio, make sure a formatted data disk is in drive DF0:, the internal Amiga disk drive.

Saving your drawings to disk at frequent intervals is a very good habit to get into. While you are learning to use *Professional Draw*, you will want to protect your work from destructive accidents such as the power off switch. Even as an expert, you are still capable of making mistakes, and will be subject to acts of God or the electric company. If you have a hard disk for your Amiga, continue to make backups of your folios on floppy disks as well.

There are two ways to save a folio to disk. The first is using *Save As*.

To use *Save As*:

- Make sure your data disk is in the internal drive (DF0:).
- Select the *Save As* item from the *Project* menu. A file requester will appear containing a list of available *devices*. This may include disk drives, hard disk partitions, or RAM.
- Click on the *DF0:* gadget to indicate that you will be saving your folio on your formatted disk in DF0:
- In the *File* text line, type the name for your folio, **testsave** for example.
- Click on the *OK* gadget to save the folio.



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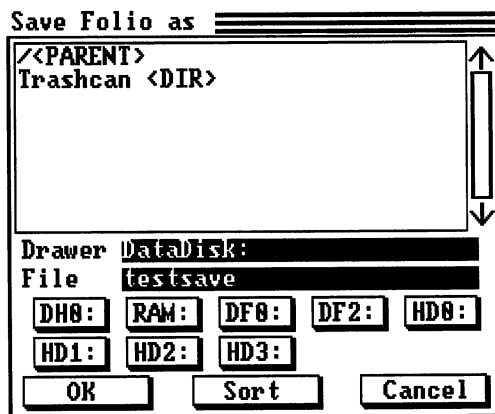
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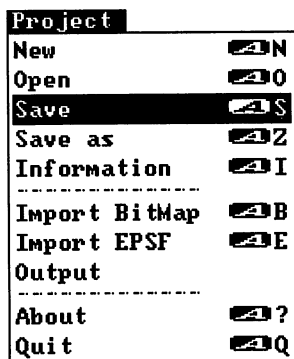
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The name of the folio (visible in the status line at the top) should change to the name that you specified with the *Save As* item.

The second way of saving your folios is to select the *Save* item. The *Save* item is very convenient when you are updating a file that you are working on. This option saves the folio under its current name (in the title bar) without the hassle of re-entering the same file name information.

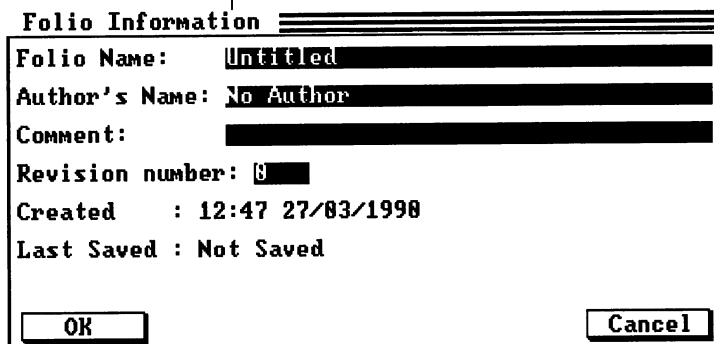
WARNING: The *Save* item overwrites the previously saved file!



Selecting *Save* causes your file to be saved immediately to whatever disk and directory was used in the *Save As* operation, or the default drive and directory if the *Save As* operation hasn't been used. If no file name has previously been specified using the *Save As* or *Project/Information* item, *Professional Draw* will ask you for a file name before saving the folio.

To give the file a name:

- Select the *Project/Information* item.



- Delete the default file name *Untitled*, and type in the name of your file.

From now on, if you make any changes to your

folios, and wish to update it to disk, simply select the *Save* item, and *Professional Draw* will automatically use the given file name, and the previously specified disk drive and directory.

Loading a Folio

If you want to load a previously saved file, use the *Open* command from the *Project* menu. To demonstrate this, clear the folio in memory, and restore the folio that you already saved.

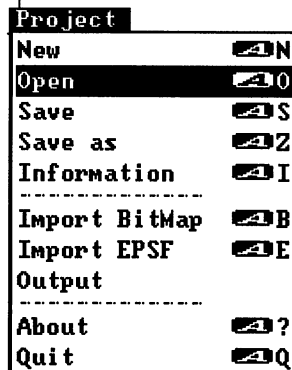
To clear the folio in memory:

- Select the *New* item from the *Project* menu.
- A warning requester will appear.
- Click *Yes*, and the page on the screen will be erased. The name of the folio will go back to being *Untitled*. Clearing a folio is not necessary if you wish to load a previously saved folio. The *Project/Open* command will automatically clear the current folio.

To load the previously saved folios:

- Select the *Open* item from the *Project* menu.
- A requester similar to the one used in the *Save As* item will appear.
- Select the disk drive and directory, if necessary.
- Click on the SORT button, if necessary, to see a sorted list of files.
- *Professional Draw* will give you a list of all of the files located in that directory (in this tutorial there will only be one). Click on your file with the mouse pointer. *Professional Draw* will take your selected file, and transfer the name to the *File:* text line.
- Click the *OK* gadget to load the file.

NOTE: The previous two steps can also be achieved by double-clicking the left mouse button on the file name.



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Professional Draw will load the file, and you will see your folio on the screen. In this case, you will see the blank page you created earlier.

Now that you know how to save and load files, we can start on the tutorial, keeping in mind that you can stop and restart any time you wish.

You should save your drawings frequently . It is very easy to load a previously saved folio, but much harder to recreate it from scratch if something goes wrong.

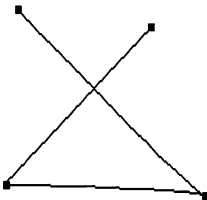
You are now ready to draw.

Creating Objects

As discussed in the introduction, structured drawings consist of objects. An object consists of one or more elements: lines, ellipses, rectangles and so forth. We shall use the *Pen* tool to create our first object.

Drawing straight lines

- Move the pointer over the *Pen* tool's icon and click the left mouse button. This is called "selecting a tool".
- Move the pointer over to the page. The pointer will change to a set of crosshairs.
- Click and release the left mouse button where you want the line to begin. A small black square will appear. This represents the first *control point* of the object. *Professional Draw* represents all control points in this fashion.
- Move the crosshairs to where you want the line to end and click and release the left mouse button again. The second control point will appear.
- You can continue to move and click, dropping more lines in place as you go. If you drag the crosshairs to the edge of the screen, *Professional Draw* will scroll the page until you reach *its* edge.



For precision drawing you can refer to the X and Y coordinates displayed in the Menu bar. These are on during any drawing or editing operation and display position in the units you have currently set, in this case inches.

When you are ready to stop drawing lines, strike the ESC key. The ESC key will cancel any drawing or editing currently in progress.

To erase the object completely, select the *Delete* item in the *Object* menu or hit the *Shift/BackSpace* or the *Shift/Delete* keys. A requester will pop up asking if you want to delete all selected objects. You will know if an object is selected because all of its control points will be visible. Click on the *Yes* gadget or hit *Return* to delete the object.

The page should now be clear again.

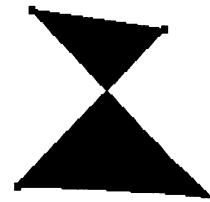
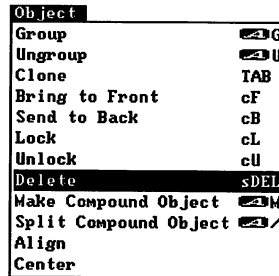
- Select the *Fill* item from the *Draw* menu.
- Use the *Pen* tool as before to draw another series of straight lines. Press the ESC key when you are finished.

This time you will see that the area bounded by the lines has been filled in. From now on, all objects drawn will be filled in this manner. This principle of continuity applies to other aspects of the object as well: whatever attributes have been selected, including line weight (thickness), color and so on, will be retained for subsequently created objects, until you select other attributes. More detail is provided in subsequent chapters.

Now delete the object you just created.

Drawing curves

The *Pen* tool is also used to draw curves, specifically *Bezier* curves.



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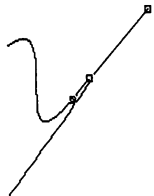
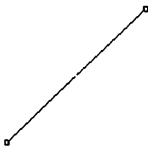
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Bezier curves are particularly suitable for structured drawing programs because they allow a curve to be precisely drawn using only four points. The two control points determine where the curve begins and ends. The other two control points, called *direction points*, or *tangent points* determine the shape of the curve.

The piece of curve between two control points is called a *segment* and the route the segment follows is called the *path*.

To draw a curve then, we must do two things: drop the control points, as you did for straight lines, and set the direction points that control the shape of the curve.

- Move the crosshairs over the page, press and *hold* the left mouse button. The first control point will appear.
- Keeping the mouse button pressed down, drag the crosshairs away from the control point. You will see a line form through the control point with small open squares on each end. The open squares are the control points for this tangent line which indicates the slope of the curve to be drawn. The curve will go in the same direction you pull the tangent point.
- Release the mouse button. A curve is now attached to the crosshairs. Move the crosshairs to move the end of the curve.

To continue the curve, you must drop another control point and create another tangent.

- Press and hold the left mouse button once again. The second control point and tangent will appear once more.
- Keeping the left mouse button pressed, drag out the tangent to the length and in the direction you desire.
- Release the mouse button.

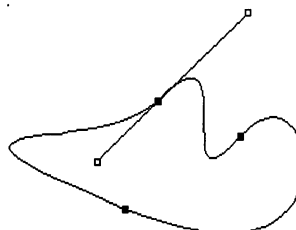
Bezier curves require some practice to use effectively. It may help you to think of the curve as representing the trajectory of an arrow. Drawing the tangent is like pulling on the bow -- the more you draw back, the further the arrow will travel forward. The higher you aim the arrow, the higher it will go.

If you drop the last control point of a curve or line on top of the first control point and hold the *CTRL* key at the same time, you have created a *closed* curve. This will automatically finish the object; you do not have to strike the *ESC* key. Any other type of curve or line is called an *open* curve and is not completed until you strike the *ESC* key.

Activating and adjusting curves

You can adjust the shape of a curve after you have completed it by adjusting either the control points or the control points or both. Both of these operations require that the desired object be *selected* or *active*.

- Select the *Null Pointer* tool. Move the pointer over the curve or line defining the object you wish to select.
- Click the left mouse button. If you click on the curve, most of its control points will show. The curve is now active.
- To adjust an control point, move the pointer to it and press and hold the left mouse button. Drag the control point to the new position and release the mouse button. You will notice that *Professional Draw* reveals the other control points for the curve during this operation.
- To adjust a control point, move the pointer to it and press and hold the left mouse button. Drag the control point to the new position and release the mouse button.



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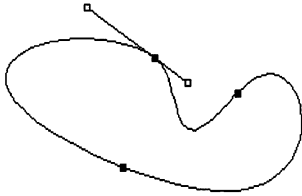
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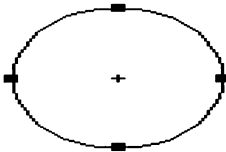
Any control point in any object can be adjusted in the same way, providing the object has been first selected with the *Null Pointer* tool. It is easy to forget to change tools before doing this.

Drawing ellipses

Ellipses and circles are drawn with the *Ellipse* tool.

To draw an ellipse

- Select the *Ellipse* tool and move the crosshairs over the page. Click the left mouse button once to establish the origin point.
- Move the crosshairs away from the origin. The ellipse will expand. Move the crosshairs around the screen to see the effect on the ellipse's size and shape.
- To drop the ellipse in place, click the left mouse button once more.



A circle is a special case of an ellipse and is created with the same tool. In this case, however, you must force, or *constrain*, the ellipse into having equal radii by holding down the ALT key while you are determining the size of the ellipse. The ALT key is the general constraining device and is also used to constrain the tangents and control points of Bezier curves to 45° increments and to constrain rectangles to squares.

- Ellipses can be converted to bezier shapes for further manipulation with the Ellipse --> Bezier function in the Special Menu.

Moving objects

If the screen is getting rather cluttered by this point, you can delete objects as described above, or you can move them to another part of the page or onto the art board.

To move an object:

- Select the *Null Pointer* tool.
- Placing the pointer placed on the object, press and hold the left mouse button. The pointer will change into a hand.
- Keeping the left mouse button pressed, drag the object to the new position and drop it in place by releasing the left mouse button.
- Double clicking on the *Null Pointer* tool will call up a requester that allows you to numerically -- precisely position the object on the page.

If you wish to move several objects at once, select them all by clicking on each one with the *Null Pointer* tool while pressing the SHIFT key. This is called *extended select*. You can also use the *Marquee* tool to accomplish the same thing.

- Select the *Marquee* tool. Click and release on a point on the page outside the objects you wish to select. Move the crosshairs until the marquee box encompasses the objects. Click and release the mouse button and all the objects within the *Marquee* box will become active.

When several objects are selected, moving one of the objects, will move all of them. Neither their shape, nor their position relative to each other will change. To move just one object within the group, hold down the SHIFT key while moving with the *Null* pointer.



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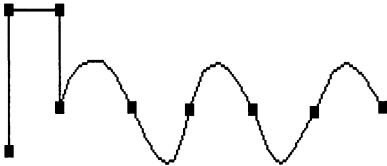
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Take some time now to practice drawing lines and curves. Try adjusting control points and direction points. Try moving and deleting objects. Feel free to experiment -- it's the best way to learn.

Tutorial Exercises

Using the Project/Import bitmap menu item, import the Sine-wave template (SineWave.tmplt) from the tutorial drawer on the data disk. You will notice that the sine wave shows all of the control points that will be used to create the drawing. You will only need to use the pen tool with the key board modifiers to trace over the wave.

Begin tracing at the far left control point and drag the mouse up while holding down the Alt Key; this constrains the line to either 90° or 45°. Follow the wave and create the next few turns while holding down the Alt Key. See how easy it was. Release the Alt key and continue drawing the wave following the tangent points drawn on the template. If you don't get them exactly right you can go back and edit them later. Notice that the tangent points follow the angle of the drawn lines and that the length of the tangent lines determine the arc of the curve. Drag the tangent, open points to align the lines that you drew with the lines of the template. When you have completed this exercise try creating a few freehand curves.

To create circular arcs, turn on the grid and grid snap in the layout tools requester under preferences menu. Holding down the Alt Key to constrain, draw a line at a 45° angle to the right, click down, and while holding the left mouse button down and drag the tangent line horizontally back so that the control point is in line with the start point. Release the Alt Key and press the ESC key to terminate the line.

COMPOUND OBJECTS

The *Make Compound Object* item in the *Object* menu allows us to create a “Donut” like image. Imagine a round donut with the hole in the middle, the cake part of the donut obscures everything behind it while the hole in the middle is transparent. The compound object works much the same way; as you travel across the complete image every time you come to another edge there is a hole until you cross the next inside edge.

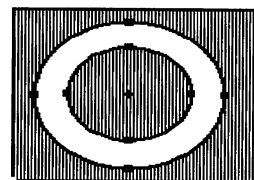
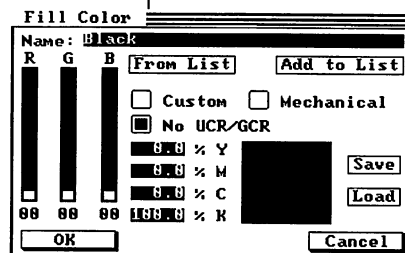
Let’s create a donut. Draw a circle with the ellipse tool by holding down the Alt key while dragging out the radius of the ellipse, constraining the shape to a circle. Fill it by selecting *fill* in the Attributes menu. This will pop up the *Fill Color* requester, allowing you to select a fill color. Draw another smaller circle inside the first, this time making sure that it is not filled. Select both objects by clicking on the marquee tool and outlining them. Now select the *Make Compound Object* from the *Object* menu.

Some where else on the page draw a rectangle and fill it with another color and then drag it over on top of the “donut” and send the rectangle behind, with the *Send object to back* option in the *Objects* menu. What you should see is the larger circle covering the rectangle and the color of the rectangle inside the smaller circle.

BLENDS

The next exercise will create a color blend and then use it to create an airbrush-like effect for text.

- Draw a vertical box approximately half an inch wide by one and a half inches deep on the left side of your page.



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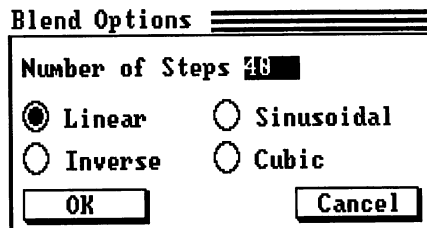
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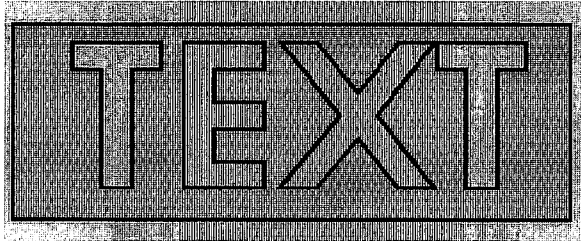
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- Clone this box and move it approximately 2 inches to the right.
- Fill one box with a color, like Blue. Go to the *Attributes* menu and choose *Fill Color*. The *Fill Color* requester will pop up. Click on the *From List* button, and select Blue from the list of colors. Also under the *Attributes* menu are the *Line Weight* and *Fill* options; turn *Fill* on and under *Line Weight*, select *None* button.
- Do the same for the other box, except choose another color, like Cyan.
- Using multiple select or the *marquee* tool select both boxes and under the *Object* menu select *Align/Top*.
- While the boxes are still selected go to the *Special Menu* and select *Blend*. Use the *Linear* option for the shape blend and type in 8 for the number of steps, then click on OK. You will see the colors blend from a Cyan Blue to a Royal Blue, make sure the edges of the boxes are touching. You have just created an eight step blend of colors. For more information see the chapter on blends.
- Select *Wireframe* in the *Preferences Menu*.
- Click on the *Text Tool* and then on the screen outside of the blend you just created. When the text requestor appears select a typeface and a point size, try 48 points. Type in the word "AMIGA" in all uppercase letters and click the OK gadget. The word should appear on the screen near where you clicked the text tool.
- Select the rectangle tool from the tool box and draw a box around the word leaving a margin on all four sides. Give it a light grey fill color.

- Select both objects using either the *marquee* tool or multiple select with the mouse.
- With both objects selected choose the *Make Compound Object* from the *Object* menu. You should have a colored box around transparent words. To Test this theory put the word on top of the color blend, and turn off the WireFrame mode.

The effect should be the word AMIGA in blended colors. If the bordering box around the letters is the same color as the page the compound object created a mask. Resize the elements as necessary.



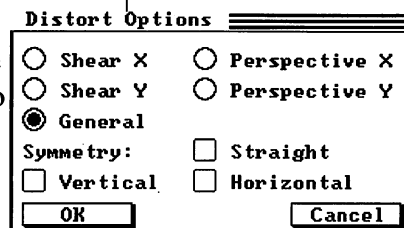
In the exercise you used the *linear* blend function to create the Color gradiation; the blend tool also allows us to alter shapes from one to another. See the chapter on *Editing* for further details about blends.

Distortions and Typographic Logos

In this exercise you will distort a word and create the *DINER* logo pictured on the right. Using the text tool, create the word "DINER" in 80 point Univers with a slant of 10°.



- Double clicking on the sizing tool, set the Y Scale to be 180%. This will elongate the text.
- Double click on the distort tool and set the symmetry button to vertical. You can create the distortion at left by dragging either of the two bottom corners downward. Note that the opposite corner moves down as well. Play around with the different types of distortions,



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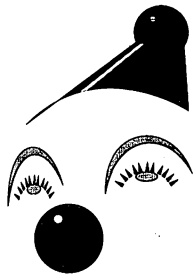
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COME ONE!
COME ALL!



and when you are ready to see the effects of your distortion hit the *Spacebar*. Pressing the *ESC* key will abort any distortion you don't like.

- Now clone the object and send it behind with the selections from the *Objects Menu*.
- Change the Fill color of the cloned DINER and make it 73% grey.

Look at the completed image. Using what you learned previously in the tutorial, try to finish it. The finished logo has already been saved on the disk as "DINER.logo". Check your work with that file. See the chapter on TEXT for other methods of manipulating text in Professional Draw.

Clown Tutorial

Look at the completed picture on the left to see what you will be working towards. Clear out any pages you currently have in memory. If you wish to save them, do so now. When you have done so, continue on with the tutorial.

- Insert the *PDrawUtil* disk in any drive.
- Select *Open* from the *Project* menu. When the *Open Folio* file requester appears, select the drive with the disk in it.
- Click on the TUTORIAL directory, and select the file: CLOWN.PD
- Click on *OK*.

Let's take a moment to familiarize ourselves with the operation of three more tools in the general tool section of the tool box, the *Magnification* tool, the *Hand Move* tool, and the *Page Position* gadget.

The *Magnification* tool allows you to blow up any part of the page to see it in more detail. For example, to get

a better idea of what the right eye of the clown looks like, we shall zoom in on it.

- Select the *Magnification* tool.
- Click on the approximate center of the eye and move the crosshairs until the box surrounds the eye area. It is this area that will be blown up to the full size of the screen.
- Click the left mouse button. *Professional Draw* can magnify a page by up to 8 times its normal size.

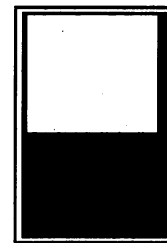
To pull back out again: Select the *Magnification* tool and double-click the crosshairs anywhere on the page. *Professional Draw* will reduce the image by a factor of two and redisplay the page. You can repeat this until the page is 1/4 of its normal size.

Alternatively, double-click on the *Magnify* tool and a size requester will pop up. Click on the text bar and type the scale factor you want. To zoom in or out by a factor of two, use the + and - keys.

The *Hand Move* tool lets you slide the page around the screen. This helps you align the object near the rulers for editing, and other manipulation.

- Select the *Hand Move* tool. Move the pointer over the page and it will change into a hand. Press and hold the left mouse button and drag the page in the direction you wish to go. Release the mouse button.

The *Page Position* gadget lets you move the page more quickly than with the *Hand Move* tool. The large black rectangle represents the entire page while the white rectangle inside represents the currently visible area of the page. Press and hold the left mouse button on the white rectangle inside the box. Drag the rectangle around inside the box to reposition the page on the screen.



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After practicing with these tools, you should be ready to draw the clown.

Begin by creating a new page.

- Select the *Create* item from the *Page* menu. Use the default page settings by clicking on the *OK* gadget. After a moment, the new page will appear.

Much of the work you will likely be doing is tracing over a bitmap image of some description. It might be a digitized drawing, a digitized still image from a video tape recorder or art that you have created with an Amiga paint package. This image is called a template. To use it, it must be imported into *Professional Draw*.

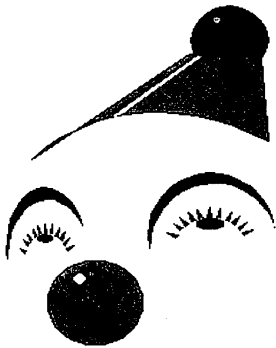
A bitmap version of the clown's face is contained in the *Pictures* drawer on the *Professional Draw* disk. Make sure this disk is in one of the disk drives.

- Select the *Import Bitmap* item in the *Project* menu. The *Import IFF Bitmap?* file requester will pop up. Click on the file name *clown.tem* in the *PDraw/Pictures* drawer and then click on the *OK* gadget to load it.

A monochrome version of the clown will appear. For display purposes, *Professional Draw* converts color bitmaps to four gray scales. However, it retains all of the original colors in its memory and will print them. For more details, see the *Bitmaps* chapter.

The image of the clown poster is now "attached" to the pointer: as you move the pointer, the bitmap image will move with it.

- Set down the image by clicking the left mouse button when the clown's face is approximately in the center of the screen.



To prepare the working environment for tracing:

- Put *Professional Draw* into Wireframe mode by selecting the *Wireframe* item in the *Preferences* menu. If the *Wireframe* item is not selected, *Professional Draw* will render everything on the page as closely possible to the way it will look when output on a printer. While this is a good mode for previewing your work before it is printed, it is also much slower, making editing cumbersome. Selecting *Wireframe* causes the page to be drawn in simple outline, or *wireframe* form, which is much faster. This has no effect on the output, and you can still switch the display to non-wireframe mode at any time to preview the final results. As a general rule, turn wireframe on while editing and off when previewing.

You could also switch to black & white mode or to a non-interlaced screen to speed up the screen display and conserve memory. However, you would then have to sacrifice the gray scales and/or the higher resolution.

- Second, select the *Draw from Center* item in the *Preferences* menu. This truly is a matter of preference for it will make no difference to the speed of the display. However, you may find tracing circles in this image easier with the *Draw from Center* mode on.
- Finally, make sure the *Fill* option is turned on. There should be a checkmark beside it.

Start with the clown's hat. Use the *Magnification Tool* to zoom in on the hat so that it fills most of the screen.

Preferences		
Layout Tools		
Draw from center		aC
Quick Move		aQ
✓ Memory Warning		aM
✓ Black & White		aB
✓ Interlace Screen		aI
✓ Wireframe		aW

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The hat is drawn with the *Pen* tool. Drop the first control point at the lower left corner and create a tangent to fit a Bezier curve along the rim. Click down at the right corner of the hat. The rest of the body of the hat is drawn with straight lines only. Simply click to drop the other three control points. Click on the first control point while holding down the *CTRL* key to complete the hat.

NOTE: Do not worry too much about accuracy at this stage; you can always adjust it later.

The ball on top of the hat is drawn with the *Ellipse* tool. Estimate where the center is and click there to establish the the first point. Expand the ellipse outward until it is approximately the same size as the bitmap ball and click again to drop it in place. You can move it with the *Null Pointer* tool if it's not quite in place.

The nose is drawn with the *Ellipse* tool but with the *ALT* key depressed to constrain the ellipse to a circle.

Where to place control points

There are three guidelines that can help you choose the right place to drop a control point while tracing a curve:

- Drop control points on either side of a bend rather than directly on it.
- Space control points apart as much as possible.
- Try to visualize how long the curve is and place the first tangent point about 1/3 of this distance from the first control point.

Wrap up the drawing of the face with the clown's right eye, which is composed of a number of graphic elements: the eyebrow, the eyelashes and the pupil.

Draw the eyebrow using 2 Bezier curves which you will later join. First, the top line of the eyebrow:

- Select the *Pen* tool. Press and hold on the bottom corner of the eyebrow to place the first control point.
- Keeping the mouse button pressed, drag downwards to create the first tangent. Release the mouse button.
- Move the end of the curve to the other corner of the eyebrow and draw the second control point and tangent.
- Release the mouse button and press the ESC key to finish the first segment.

The bottom segment should be drawn similar to the upper one. After completing the two segments they must be joined into one. To do this make sure that the endpoints of the two segments are coincident (move one if necessary). Then, move the mouse pointer over one of the end points and click and hold the left mouse button. Hold down the CNTRL key and release the left mouse button. This will join the two curves at that point. Do the same for the other end of the two eyebrow segments. If you want to adjust the tangents at this point be sure to hold down the SHIFT key so you can adjust the tangent points independently.

Now we shall tackle the eyelashes. Zoom in tighter so that the eye fills a good portion of the screen -- a scale factor of about 3.

The eyelashes are triangular objects filled with black and arranged in a semicircle about the iris. We can draw a circle to use as an alignment guide and then delete it when you are done.

- Select the ellipse gadget. Click the left mouse button at a point below the eyelashes, if you have *Draw from Center* on, or above and to the left of the lashes if *Draw from Center* is off.



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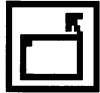
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- Press and hold the ALT key. This will force the ellipse to be a circle. Move the crosshairs away from the point until the line of the circle follows the arc of the eyelashes. Drop the circle in place by clicking the left mouse button. Move the circle if necessary so that the top arc matches the lower edge of the eye lashes.
- Select the *Pen* tool and use it to trace over the center triangle directly above the alignment circle's control point. Be sure to close the triangle by holding the *CTRL* key.
- Select the *Rotation* tool. Move the crosshairs to the center control point of the alignment circle and click the left mouse button. This sets the origin of rotation. Move the pointer to the tip of the triangle and press and hold the left mouse button. Drag the crosshairs to rotate the triangle to the left until it lies over the next triangle. Drop a copy of the triangle by striking the TAB key. Keeping the left mouse button pressed, repeat this procedure on the left side and then on the right, until you have created copies of all the triangles. Strike the ESC key to return the triangle to its original place.
- Finally, delete the alignment circle. Make sure it is the only active object and select the *Delete* item in the *Object* menu.

The last part of the eye is the iris. This is traced with an ellipse.

- Select the *Ellipse* tool. Move the crosshairs over to the center of the iris and click the left mouse button to set the origin.
- Move the crosshairs away until the ellipse matches the outline of the iris and drop it in place by clicking the left mouse button.

The left eye is very similar to the right. However, because we are looking at a three-quarter perspective of the clown's face, it has been foreshortened laterally. This foreshortening can be effectively reproduced using *Professional Draw's Distortion* tool on a copy of the right eye.

To make a copy of the right eye:

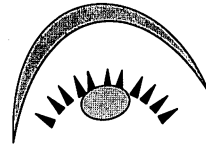
- Use the *Marquee* tool to extend-select the various objects comprising the right eye.
- Select the *Clone* item in the *Object* menu (or hit TAB) to make a copy of it.
- Use the *Null Pointer* tool to move the copy and center it over the left eye.

To foreshorten the eye:

- Select the *Distortion* tool. A box with eight control points will form around the active object. By dragging these control points with the crosshairs, you can control the amount and the direction of the distortion.

This tool takes some practice to use effectively but a couple of notes may be helpful (See *Edit* section for more details). *Professional Draw* fits the control box around the outside of the object; it will always be outside the object no matter how much the object is distorted. Secondly, you can view the effect of moving the control points at any time by striking the SPACEBAR to refresh the screen. You can also use the *SHIFT* key used to constrain the edges of the Control box to straight lines.

In the case of the eye, the amount of foreshortening is greater on the left side of the left eye than on the right side. Therefore, try moving the three control points on



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the left side of the control box horizontally to the right about two-thirds of the distance to the center control points. Then move the three control points on the right side of the control box about half the distance to the center control points. Press the SpaceBar to see the effects of the distortion. When finished, select the *Null Pointer* tool again to complete the distortion.

The final touches are the highlights on the nose and the hat. These are drawn as circles with the *Ellipse* tool, for the nose and the hat ball, and a polygon for the long highlight on the hat.

If you have not done so before, save your work to this point. You can either save the folio, which contains two pages (the first page contains the complete drawing and the second the one you are working on) or you can just save the current page. To do the latter, select the *Save* item from the *Page* menu. When the *Save Page* file requester comes up, click on the text bar, type in a file name, and click on the *OK* gadget.

You can dispense with the bitmap now. Select it by clicking with the *Null Pointer* inside its borders and delete it.

You can also turn WYSIWYG mode back on by deselecting the *Wireframe* item in the *Preferences* menu. You may get a bit of a surprise - all of the elements of the clown's face are black! Obviously, the colors must be changed.

The color of an object is one of its *attributes*. Other attributes include the line weight, line pattern, fill status and line join type. For more information on attributes, consult the chapter on *Objects*.

You can set an object's attributes when creating it, or afterwards, when editing it. To change an object's attributes, it must first be selected with the *Null Pointer*.

Let's begin with the nose:

- Turn *Wireframe* mode on.
- Select the nose. Press and hold the *right* mouse on the *Fill Color* item in the *Attributes* menu. A requester will appear. To access the other colors available, select the *From List* item.
- The *Fill Color* list will appear. Select the down arrow to scroll through the list of colors until *Red* appears and then select it. Finally, click on the OK button in the *Fill color* requester. The nose will now be filled with red.

Use the same method to color the other objects in the drawing. First select each one, then select the desired color for the fill.

There is another attribute we will alter for some of the objects -- their line weight. The default line weight is *Hairline*, which is displayed as one pixel thick but which in practice produces the finest line the output device can print (down to a quarter point line).

The highlights shouldn't have any line around them i.e. a line weight of *None*. To change their line weight attribute, extend select each one using the *Null Pointer* and the SHIFT key. Then select the *Line Weight* item in the *Draw* menu. A requester will pop up. Select the *None* gadget and then the *OK* gadget.

You may have noticed that the blue hat ball is in front of the red hat. To correct this, we must change its *layer*. Select the ball with the *Null Pointer*. Then select the *Send to Back* item in the *Object* menu. *Professional Draw* will redraw the ball behind the hat.

The circus poster is almost complete, except for the enclosing box and the text. Save your work at this point.

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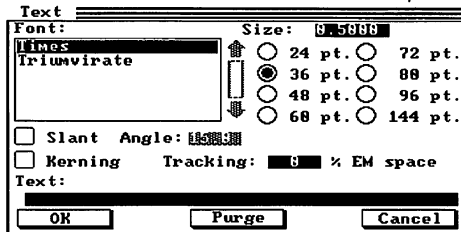
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Text is treated like any other object in *Professional Draw*. It can be filled or not filled, colored, edited and so on. We will use filled black letters. Make sure fill is set and Black is selected as the Fill Color in the menus.



Select the *Text* tool and move the pointer to the place on the page where you want the first line to start. The pointer will change to a vertical bar. When you click on the starting point, the *Text* requester will pop up. This lets you set the size of the text to be used, the font and the text itself.

Select the Univers font and the 48-pt size gadget. Click into the text box and type **COME ONE!**. Then click on the *OK* gadget.

Professional Draw will render the text on the page. Note that the letters are all extended selected. This enables you to move the text as a block if you are not happy with its position. Follow the same procedure to set the second line of text, "**COME ALL!**".

The manipulation of text is one of *Professional Draw*'s most creative tools. For more information, see the chapter on *Text*.

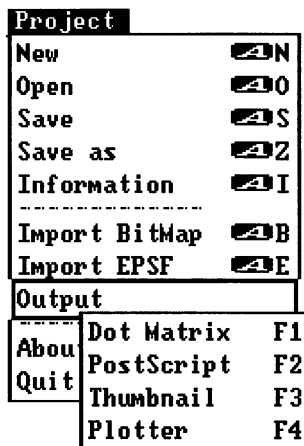
Finally, select the *Rectangle* tool. Change the line weight to 4 points, turn *Fill* off, set the Line Join to *Angle*, and draw a box around both the face and clown. Save your work.

Congratulations! You have now grasped most of the essentials of working with *Professional Draw*. It only remains to print your work.

Printing

- If you are printing to a *PostScript* device, such as a laser printer or a Linotronic 300 im-agesetter machine, select *Print PostScript* from the *Project* menu. The *Print to PostScript* requester will appear.
- For now we will accept the default settings and print only the current page. Click on the *OK* gadget and in a few minutes the drawing will appear with the colors rendered as shades of grays.
- If you are printing to a dot-matrix printer, select the *Print Dot Matrix* item in the *Project* menu. The *Print to Dot Matrix* requester will pop up. All the options available for your printer will be displayed, provided that the correct printer driver is chosen through WorkBench's Preferences. For now we will accept the default settings. Select the *OK* gadget and *Professional Draw* will print the current page to the printer specified in the AmigaDOS Preferences program. If this is a color printer, your illustrations will be printed in color, otherwise in grays.

Professional Draw provides comprehensive printing capabilities, including three- and four-color separations. For more detailed information, consult the chapter on *Printing*.



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4. BASIC CONCEPTS

Professional Draw is a “page-oriented” structured drawing program. In this it is like its sister program, the *Professional Page* page layout and design system. This chapter provides information on what might be termed the “administrative” features of the program.

The Screen

The screen is your art table, with a representation of your current page on the right hand side of the screen. The normal screen display is 640 by 400 pixels on an ordinary NTSC (North American Video Standard) monitor and 640 by 512 on PAL systems. Using an “overscan” utility such as MoreRows, you can display up to 704 by 422 pixels at once, although this takes more memory.

To attain this resolution, the program normally operates in *interlaced mode*. This causes a flickering that some people find distracting. The program will also operate in non-interlace (640 x 200) mode. This mode removes the flicker entirely although there is a loss of resolution in the screen display. Note that the output is not affected. If you want to work in interlace mode, there are several workarounds for the flicker. You can experiment with the contrast and brightness controls -- lowering both will reduce the

flicker. You could purchase a Commodore A2080 long-persistence color monitor. You can avoid a working environment that uses fluorescent lighting or you can buy a contrast reducing screen, such as Jitter-Rid.

For the A2000, it is also possible to buy a bi- or multi-synchronous color monitor and a FlickerFixer display card. Hi-resolution ('full page') monitors such as the Amiga A2024 gives you 1008x800 pixel resolution without flicker.

PAL Support

Professional Draw looks to see if your Amiga has a PAL (European Video Standard) chip. If it does, *Professional Draw* operates in PAL resolution (640 by 512 pixels) on a normal display.

Multitasking

Professional Draw supports multitasking, up to the limits of "chip" and overall memory. (Chip memory refers to the portion of RAM to which the Amiga's graphics coprocessors have access.) This means that you may be able to run other programs simultaneously with *Professional Draw*. Some programs require a lot of chip memory (such as *Professional Draw* and *Deluxe Paint II*, or *Professional Draw* and *Professional Page*), there may not be enough chip memory to support both. If low memory is a problem, you can try to operate *Professional Draw* in Black and White mode.

Anatomy of the Screen

The main area shows the top half of the page on which you will draw. At the top is the title bar, sometimes called the status bar. It displays the name of the current project.

Running along the top and left side of the page, are two

rulers. These measure the page in whatever units are specified in the *Layout Tools* requester. They automatically adjust to whatever magnification is being used.

Whenever the crosshairs are displayed, during editing or drawing, the rulers will have a sliding line to indicate the position of the crosshairs on the X and Y axes.

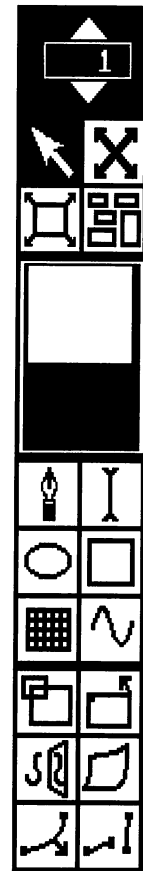
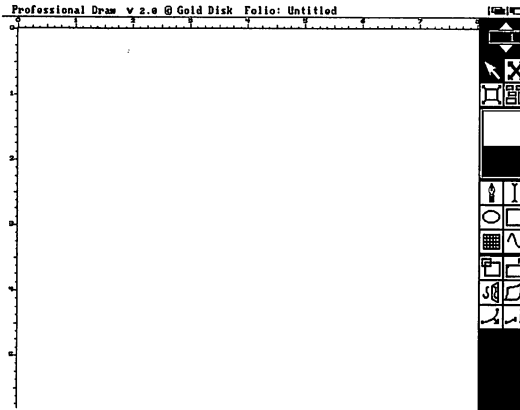
To the side is a strip, running vertically, consisting of a number of small pictures, or *icons*. This is *Professional Draw's* tool palette. By selecting the icons, also known as *gadgets*, with the Amiga's mouse, you select tools to work with.

Starting at the top is the page number gadget, which provides access to each page. Below that is a group of four *general tools*. These are used to manipulate the display and the objects drawn there. Below them is the large *Page Position* gadget used to shift the display window rapidly over the page. Immediately below the *Page Position* gadget are the six *drawing tools*. These are used to create the fundamental objects which are the building blocks of a structured drawing.

Finally, at the bottom, are the six *editing tools*. These tools let you manipulate and change the drawings you have already created. It's said that the secret to good writing is re-writing; the editing tools will help you perform the same function in *Professional Draw*.

At the very top right hand corner are the *depth arrangement* gadgets. Clicking with the left mouse button on these will either push the display behind the *Workbench* or pull it to the front.

Pressing and holding the left mouse button will reveal the menu strip. This takes the place of the title bar.



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Moving the pointer up to the menu strip while keeping the right mouse button held down will reveal the drop-down menus that provide additional access to *Professional Draw*'s features.

Using Requesters

Requesters are used whenever additional information is needed by *Professional Draw*. Requesters prompt for required information or acknowledgment of an action. There are several types of input components that requesters use, including: listings, booleans, strings, buttons, and sliders.

Listings

Listings are displayed in a small window. They may contain directories and file names, color names, font names. If there are more entries than can fit into the window, the scroll bars (to the right of the window) can be used to display different sections of the list. Scroll arrows (above and below the scroll bar) can also be used for this purpose. To select an entry in the window, click on the entry. In most requesters, it is possible to select an entry and acknowledge the requester by double clicking on the entry.

Booleans

Boolean: Booleans are "ON/OFF" type requesters. "ON" (a filled circle) shows that a particular feature is active. "OFF" (an empty circle) shows that a particular feature is inactive. Generally speaking, clicking in the circle will change an "ON" state to an "OFF" state and vice-versa.

Strings

String requesters expect information to be typed in. To enter information, click the text line associated with the string requester and use the normal Amiga editing

features to enter the information. Any numbers displayed or required by Professional Draw are in the current units (set with the Layout_Tools requester). Text input should be terminated by pressing RETURN.

Buttons

Button requesters initiate an action. There are three styles of buttons in *Professional Draw*. Round buttons are mutually selective, that is they select one option and turn off another; for example in the Layout Tools requester you can choose your units in either inches, or picas, or centimeters. Square buttons allow you to select a multiple of different items within the requester; for example also in the Layout Tools requestor you will see that you can have the ruler on, grid on, grid snap on and margins on. The third style of button is rectangular in shape and is either a Yes/No or Ok/Cancel for example, they may select a further requester or to acknowledge the current one. They are rectangular in shape and are activated by clicking on them. Some of the rectilinear buttons on verification message requestors can be responded to by hitting the return key [Yes] or by hitting the spacebar [No!]. For example, when deleting the selected object, a verification requestor will appear asking if you are sure that you want to delete all the selected objects, hitting the spacebar is the same as clicking on the No! button.

Sliders

Sliders are used to input values on a scale. For example, in the color definition requester, there is a scale for the percentage of red to use on the screen. Adjusting the slider will adjust the amount of red used.

File Requester

In *Professional Draw*, all access to disk files is done through a file requester. The file requester has the following components:

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Listing

All directories and files are listed in the listing window. Clicking a directory or file will place the name into the *Drawer* or *File* string text line. Double clicking on a file will select the file and acknowledge the requester. Clicking on a directory will open that drawer on disk. To close a drawer, just click on `"/<PARENT>"` entry in the listing.

String components

Drawer and *File* names can be entered directly into the appropriate text lines.

Buttons

Drive selection and acknowledgment buttons are also in the file requester. When you select a new drive, the listing window will be updated with the files from the new drive.

Moving Requesters

If a requester obstructs your view of a part of the page, simply grab the requester box by the *moving* gadget (the horizontal lines at the top of the requester).

Extended Select

This technique greatly speeds up the process of making a series of menu selections by allowing you to make several mouse selections with one pass of the mouse across several menus.

- Pull down a menu, and, keeping the right mouse button pressed, click with the left mouse button on several items and sub-items as you work your way down the menu.
- When you release the right button, the various items and sub-items you selected will be enacted in the order in which you selected them.

Tool Pointers

Several tools have pointers to help you see which one is currently in use. The *Null Pointer* is an arrow. When you move an object on a page, the pointer turns into a hand. When you move an object onto the art board, the pointer turns into a thumb tack. The *Text* tool pointer is a vertical line showing the exact point where text will be inserted. The *Hand Move* tool pointer is a hand.

To help you with precise positioning, guidelines on the rulers on the top and left of the page show where the pointer is located. On the top left of the menu strip, the exact coordinates of the pointer's location are displayed in the current units of measure.

The Art Board

Essentially, the art board is the *Professional Draw* equivalent of a designer's drawing table or light table. The art board can be used as a storage location for objects that you wish to keep off the page for one reason or another.

The real power of the art board lies in allowing you to move objects from one page to another. Although the page will change, the art board and its contents remain.

The art board serves as more than just a storage place. You can actually create objects directly on the art board, using any of *Professional Draw*'s tools. All of the object resizing and manipulating features work on the art board as well as the page.

Professional Draw tells you if you are over the art board, or the actual page. If you move an object on the page, the pointer turns into a hand. When moving that object off the page and onto the art board, the pointer will change to a thumb tack.

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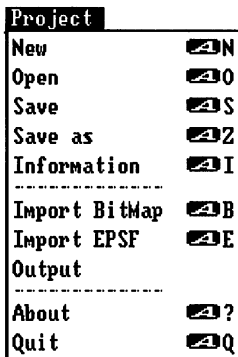
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Folios and Pages

Professional Draw provides several places to create and store objects.

Most of the drawing done with *Professional Draw* will be on pages. Pages can be of various sizes and you can create as many pages as memory permits. A folio consists of one or more pages.

We can take a closer look at folios and pages by examining the *Project* menu, which is the first one on the left.



The Project Menu

The *Project* menu is the most general menu. It provides management of your files and output. For the moment, we shall consider just the file management items in the menu.

New

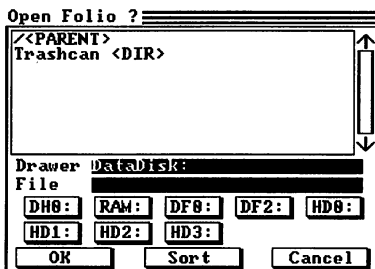
New creates an environment for a new folio:

- Clears the existing folio from memory. There can only be one folio open at a time (though that folio can have many pages).
- *New* is automatically executed upon startup.
- The name of the folio is changed to “Untitled”.
- Any material which is located on the art board is deleted.
- The Color list is forgotten but the Clip list is retained.

Open

Open loads an existing *Professional Draw* folio, reading it from a floppy disk or a hard disk.

- *Open* deletes the folio in memory. A warning appears to confirm that the current folio will be deleted.
- It brings up the file requester which allows you to



enter the name of the folio to be loaded.

- Any materials located on the art board will be deleted. This is because you are loading an entire folio, including a saved art board which may already have materials on it.
- The Color list is forgotten but the clip list is retained.

Save

The *Save* item stores the new version of the folio that you've been working on, using the current folio name as the filename. If no name has been specified a file requester will pop up and prompt you for a file name.

- Select *Save* frequently while working on a folio, to ensure not losing data because of a power failure or a system crash.
- The art board is saved as part of the folio.

Save As

This item saves the current folio under a new name.

- The file requester is used to select a new filename for the folio.
- The art board is saved as part of the folio.
- The new filename becomes the current folio name.

Information

This item displays information related to the current folio.

- The *Folio Information* requester includes user-definable text lines for the folio name (file name), author's name, comment, and revision number.
- Changes made with this requester are saved with the folio.

The screenshot shows a dialog box titled "Folio Information". It contains several text fields and labels: "Folio Name:" with the value "Untitled", "Author's Name:" with the value "No Author", "Comment:" with an empty field, "Revision number:" with the value "8", "Created" with the value "12:47 27/03/1998", and "Last Saved" with the value "Not Saved". At the bottom of the dialog are two buttons: "OK" and "Cancel".

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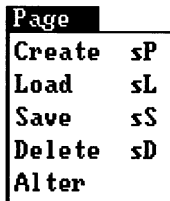
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- Two dates/times are saved with each folio: the date/time it was first created and the date/time it was last saved.

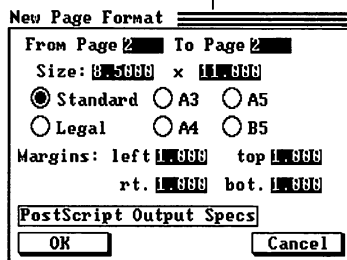


The Page Menu

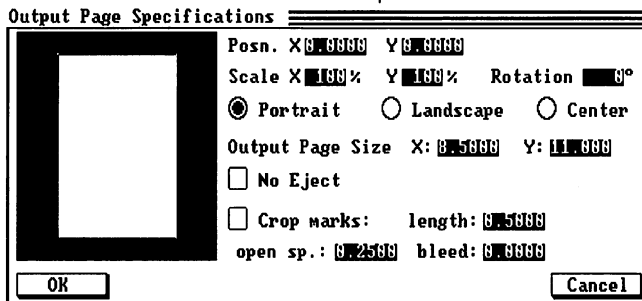
The *Page* menu is immediately to the right of the *Project* menu. Pages are kept in consecutive order within *Professional Draw*.

Create

When the *Create* item is chosen, the *New Page Format* requester pops up. It enables you to set the page size and margins for a range of new pages. There are six gadgets for standard sizes and user-definable gadgets for custom page sizes and margins.



Also within the *New Page Format* requester is a gadget to access the *PostScript Output Page Specifications* requester. It allows you to set the position, scale, rotation and orientation of the new page output in PostScript. It also lets you define output page size, crop mark lengths and positions and whether sheets are ejected after printing.



The outline of your modified printed page will be superimposed over the white rectangle of the printer's output dimensions. These settings only have an effect when outputting to PostScript devices. For more information, see the chapter on *Printing*.

The new page is loaded at the end of the folio. Creating a range of pages in the middle of a folio shifts the following pages up automatically.

Load

When the *Load* page item is selected, the *Load New Current Page* file requester pops up to enable you to load a page in as the new current page. The new page is loaded at the end of the folio.

Save

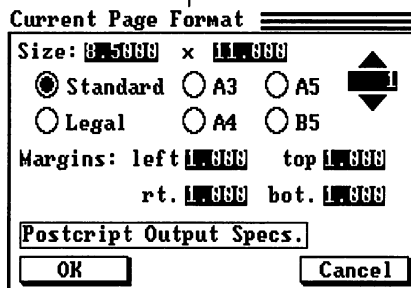
This item is identical in action to the *Load* item, except that it stores the current page.

NOTE:A page file only holds one page at a time; it does not contain any information on the page number or the art board. It is suggested that you give your page files a suffix like “.page” to distinguish them from folios and clips. These files are not interchangeable. You cannot, for example, load a page as a folio, or a library of clips as a page.

Alter

Selecting *Alter/Current* brings up the *Current Page Format* requester, which is almost identical to the *New Current Page* requester except that it has a page number selection gadget. The requester allows you to change the settings for the current page. Changing the page number moves the current page to that place in the folio and shifts the subsequent pages up. Only one page is affected so that you can have different page formats in a document.

Selecting *Alter/Default* brings up the *Default Page Format* requester. This is almost identical to the *Current Page Format* requester except that it has no page number gadget. All subsequently created pages will take on the attributes of this default page.



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Moving around the page

When you are working on a page in one of the higher magnification levels, you may find it useful to be able to see where you are on the page, and to scroll around the magnified page with some degree of precision.

The part of the page visible on the screen is indicated by the white rectangle in the *Page Position* tool. The black rectangle represent the entire page.

There are three ways to move around a magnified page:

- Select the *Hand Move* tool and use it to drag the screen over the page.
- Use the white rectangle on the *Page Position* tool to drag the visible part of the page around the screen.
- Use the cursor keys to jump around the page. One press of a cursor key moves the page 1/5 of a display screen in the selected direction (about 75 pixels). Pressing SHIFT/cursor moves the visible part of the page four times as far in the selected direction. Pressing CTRL/cursor jumps to the edge of the page in the direction selected.

Changing Pages

The *Page Number* gadget has two ways of changing the current page. Click the Up or Down arrows to select the next page or the previous page, respectively. Pages can also be selected by clicking on the page number and typing the desired page number.

Using the Grid

It can be difficult to position objects with great accuracy using the mouse. You can use a grid to help you position objects more precisely. In addition to being a visual guide, and unlike grids on paper, the grid in Professional Draw can automatically align objects to

the grid line intersections. The grid lines can be set to any increment horizontally or vertically.

Layout Tools

Units: ☒ Inch ☐ Pica ☐ CM

☒ Ruler: ☒ 1/8" ☐ 1/6" ☐ Pica ☐ CM

☐ Grid: ☐ 1/4" ☒ 1/8" ☐ Pica ☐ CM

☐ Snap to Grid X: 8.1258 Y: 8.1258

☐ Margins

OK **Cancel**

To set grid spacing:

- Select the Layout Tools item in the Preferences menu.
- Click on the X: spacing text line to change the spacing. Delete the contents using the backspace and DEL key or typing Δx . Type in a value and press RETURN. Do the same with the Y: spacing.
- The values are in the current units.
- Make the grid lines visible by clicking the Grid ON gadget.
- To force all future objects on the page to align to the grid intersections, turn on Snap to Grid.
- Click the OK gadget when you have set the desired options.

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5. OBJECTS

Anything - be it curve or line, ellipse or rectangle - created and completed with *Professional Draw*'s drawing tools is classed as an object. More precisely, an object in a structured drawing package is the elementary component of the drawing's structure.

Object types

Bezier objects

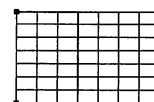
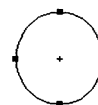
Bezier objects consist of curves, each of which is defined by four points: two control points and two tangent points. The two control points define the beginning and end of the curve. The direction and length of the lines formed by joining the control points and their respective tangent points define the shape of the segment between each control point. Straight lines and rectangles are special instances of Bezier objects; their tangent points lie on the line joining the control points.

Elliptical objects

These are defined by the length of their two radii. An ellipse that has two equal radii is a circle.

Grid objects

A grid object consists of a grid of vertical and horizontal lines.



Bitmap objects

Strictly speaking, these cannot be classed as objects in a structured drawing because they are not defined algorithmically. Nevertheless, *Professional Draw* can treat them as objects to a certain extent. Like other objects, they can be scaled and moved.

Unlike other objects, however, they are by their nature not resolution independent. They consist of a finite number of discrete elements, called pixels. For more information, see the chapter on *Bitmaps*.



The active object

All editing functions can be performed only on an active object. An object is made active by selecting it with the *Null Pointer* tool.

A Elliptical object, for example, is made active by placing the pointer anywhere on the ellipse's circumference and clicking the left mouse button.

Professional Draw indicates that an object is active by revealing the object's control points. Once this has been done, almost any characteristic, or attribute, of the object can be changed with the editing tools provided by *Professional Draw*. For more information on editing objects, see the chapter on *Editing*.

An object is made inactive by clicking the left mouse button while the pointer is anywhere else on the page or artboard, either on another object or on a blank portion.

More than one object can be made active at a time, either by holding down the *SHIFT* key while selecting several objects, or by using the *Marquee* tool in the general tool section of the tool palette.

Again, all the active objects will then display their respective control points.



Control points

All objects have associated control points that enable their size and shape to be changed. In the case of Bezier objects, curves contain control points and tangent points, which define the tangents of curves. Control points are solid squares and tangent points are open squares attached to the ends of the tangent lines.

To use control points, you must first reveal them by activating the object you wish to adjust. These can in turn be picked up and dragged with the mouse to adjust the shape of the object.

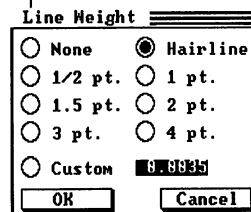
When you place the pointer over a control point of a Bezier curve and click and hold the left mouse button, *Professional Draw* will reveal the tangent points and the tangents associated with that curve. The tangent points can also be picked up and dragged with the mouse to adjust the shape of the curve. Locked objects do not show the tangent when activated. For more details, see the chapter on *Editing*.

Attributes

The attributes of an object consist of features, such as color and line thickness, that characterize it in addition to its shape and size. *Professional Draw* lets you control these attributes, both when drawing the object and when editing it.

Line weight

When making line drawings with a conventional pen, the artist must consider the thickness of the pen tip, for it obviously affects the thickness, or *weight*, of the lines drawn. The *Draw/Line Weight* menu item provides a selection of line weights: from literally zero thickness to 4 points (a point is approximately 1/72 of an inch). In addition, a *Custom* option lets you adjust the line



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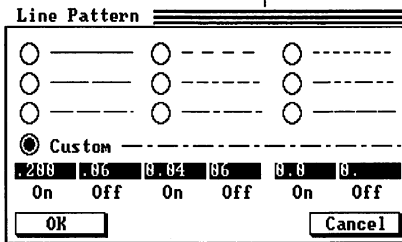
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weight to whatever you prefer, to the nearest ten-thousandth of an inch.



Line pattern

Professional Draw provides a capability no ordinary artists pen can -- line patterning. Selecting the *Line Pattern* item in the *Draw* menu, brings up a requester containing a palette of line styles. Move the pointer to the pattern you wish to use and click the left

mouse button to select it. *Professional Draw* also allows you to use custom line patterns. To get a custom line pattern, click on the custom button. This allows you to specify up to 6 'on' and 'off' segment lengths. These are in the current units.

Line join

A geometric line is a one-dimensional object: it has a length but no thickness. If we are to see the lines we draw, however, they must obviously have some thickness. Adding thickness to a single line is simple for structured drawing programs.

However, when a line must connect with *another* line of the same thickness, a choice must be made: how will the join be made? *Professional Draw* provides four styles of line join.

Butt

The *Butt* join makes no adjustment at all at the junction. Consequently, a notch is evident on the outside of the join.

Bevel

Filling in the notch with a triangle produces a *Bevel* join.

Miter

In the case of the *Miter* join, the notch is filled by extending the outside edges of the line until they meet.

Round

Selecting the *Round* line join attribute causes the notch to be filled with a circular arc.

Fills

An object consists not only of lines or curves but also of the area it bounds. This is true even for open curves: in this case, the area is considered to be bounded by the curve and a straight line drawn between the beginning and ending control points. Selecting the *Fill* item in the *Draw* menu will cause the object's area to be colored with the Fill Color selected.

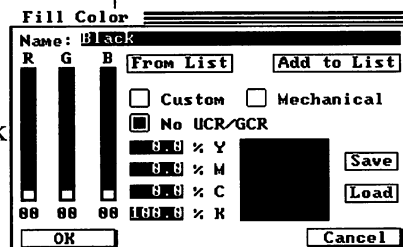
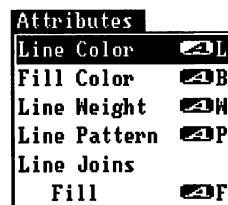
Ink color

The color of any object is determined by the line and fill colors used to draw it. These colors can be chosen by selecting either *Line Color* or *Fill Color* from the *Attributes* menu. This will cause a color requester to pop up in which new colors can be created or selected from an existing list.

To select an existing color, click on the *From List* button in the color requester. A list will pop up of pre-defined colors. You can select the color you want simply by clicking on it, and then clicking on the OK button in the color requester.

To create a new color, adjust the RGB sliders or YMCK values until the desired color appears in the large preview box, and click on OK. If you wish to add this color to the pre-defined list, click on the *Add to List* button.

In addition, you can save your color list to a file, to build a library of color lists.



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Layer

Objects that overlap have a layer attribute, that is, a characteristic that is determined by their relationship to other objects. If an object is drawn in the same area as another object, then the object that was drawn last is said to overlap or be in front of the other object(s). Similarly, objects drawn before another object in the same area are said to be behind that object.

The *Bring to Front* item in the *Object* menu will “pull” the active object from behind all the other objects. The *Send to Back* item does the reverse: it pushes the active object behind all other objects. To move an object one layer forward or backward use the shift-F keys or the shift-B keys respectively.

Grouping objects

You can construct objects out of other objects with *Professional Draw*’s grouping capability.

This feature makes multi-object drawings much easier to manipulate. Once you are satisfied with a particular part of a drawing that consists of several objects, grouping the objects into one part means that you can now treat that part of the drawing as one object. Moving, cloning, sizing and other editing functions can be applied to all the component objects of a grouped object at the same time.

Grouping and extended-selection are similar, but grouped objects stay grouped even when not selected.

Locked objects

You may lock objects against further change by selecting *Object/Lock*. Locked objects have control points that are hollow squares. To unlock an object, select *Object/Unlock*.

6. DRAWING TOOLS

The drawing tools form the heart of *Professional Draw*. They are simple enough for a novice to use intuitively; yet they are also able to serve the professional artist with power and precision.

The drawing tools create the basic objects of a structured drawing: circles, rectangles, curves and so forth. Each tool is selected by clicking the left mouse button on one of the gadgets in the drawing tools section of the tool palette, just below the *Page Position* gadget.

Once an object has been created with a drawing tool, it can be altered in almost every aspect using the editing tools and the attribute selections found in the menus.

The Curve Tool

This tool (sometimes called the Pen tool) is used to draw Bezier curves. A straight line is a special case of a Bezier curve and it is drawn with the same tool.

To draw straight lines:

- Click on the curve gadget, which consists of an icon representing a pen.
- Move the pointer to the chosen starting point and click the left





mouse button to drop the first control point.

- Move the pointer to the desired location of the end of the line and click the left mouse button again to drop the second control point.
- Further straight line segments can be added simply by moving the pointer and dropping more control points. Press the **ESC** key to terminate the operation.

To draw Bezier curves:

- Move the pointer to the desired starting point.
- To place the first control point, press and hold the left button.
- Drag the pointer to establish the direction of the tangent for the first curve. Drag in the direction you want the curve to go.
- Release the left mouse button to reveal the curve created.
- To continue drawing curves, repeat the press-and-hold action on the left mouse button to drop control points and create tangents.

To draw open curves, press the **ESC** key after dropping the last control point. To create closed curves, drop the last control point on the first control point by clicking the left mouse button while holding down the **CTRL** key. This will complete the curve and leave you ready to draw another.

Accurate positioning of the control points can be obtained by referring to the the X and Y coordinates displayed in the title bar.

To add to an open curve already drawn:

- Make sure the object has been selected.
- Position the pointer over one of the end control points and press and hold the left mouse button while holding down the **CTRL** key.

- Drag the pointer to create the tangent for the curve.
- Release the left mouse button to reveal the curve created.
- To continue drawing curves, press and hold the left mouse button as before to drop new control points and create new tangents.

Tangents can be constrained to angles that are multiples of 45° by holding down the ALT key while pressing and holding the left mouse button.

The Ellipse tool

To draw an ellipse:

- Click on the ellipse gadget in the drawing tools section of the tools palette.
- Move the pointer over the page and click the left mouse button. This action will define the origin of the drawing to be the corner of an invisible rectangle inside which the ellipse will take shape. If, however, the *Draw from Centre* item found in the *Preferences* menu has been selected, the origin will be the center of the ellipse.
- As you move the pointer away from the origin, the ellipse will expand. The exact length of the X and Y radii are displayed in the title bar.
- When you are satisfied with the size and shape of the ellipse, complete the drawing of the ellipse by clicking the left mouse button once again.

To draw a circle:

- Hold the ALT key as you size the ellipse. This will constrain the X and Y radii of the ellipse to the same length, producing a circle.



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The rectangle tool

To draw a rectangle:

- Click on the rectangle gadget in the drawing tools section of the tool palette.
- Move the pointer over to the page and set one corner of the rectangle by clicking the left mouse button at the desired location. The X and Y coordinates of the pointer's position are displayed in the title bar.
- As you move the pointer away from the origin, the rectangle will expand. At this point, the coordinates indicate width and height of the rectangle. When you are satisfied with the size, click the left mouse button once more to complete it.

To draw a square:

- Hold the ALT key as you size the rectangle. This will constrain the height and width of the rectangle to the same value, forming a square.

The grid tool

The grid tool is used to draw a grid of lines.

To draw a grid:

- Double-click on the grid gadget in the drawing tools section of the tools palette. This brings up a requester that enables you to set the number of vertical and horizontal lines in the grid.
- Enter the number of vertical and horizontal lines in the string gadgets of the requester and click on the *OK* gadget. Values of 0, 1, or 2 will simply create a rectangle.
- Move the pointer over the page and click the left mouse button to establish one corner of the grid.
- As you move the pointer away from the origin, the grid grows. The coordinates indicate width and



height of the grid. When you are satisfied with its size and shape, click the left mouse button once more to fix the grid in place.

The freehand tool

The freehand tool is a special type of Bezier curve drawing tool. In a way, it works in reverse -- you draw the curve and *Professional Draw* interpolates the control points and tangents that define that curve.

To draw with the freehand tool:

- Move the pointer over the page and press the left mouse button.
- Drag the mouse wherever you want the curve to appear.
- When you release the button, *Professional Draw* will fill in the control points and define the tangents for that curve.

An object created with the freehand tool can be edited in exactly the same way as other Bezier objects.



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7. EDITING

The editing features provided by *Professional Draw* form the creative heart of the program. You bring life to the objects you have drawn by reshaping them, resizing, changing their colors... It may be a cliché but you really are limited only by your imagination.

The use of the word “editing” for this aspect of *Professional Draw* could be said to be from a computer point of view rather than an artistic one. A more apt description might be “re-creation”, for it is here that you can really roll up your sleeves and let yourself go -- recreation indeed!

But *Professional Draw*’s editing tools do not sacrifice precision for friendliness. The program displays the X and Y coordinates of the crosshairs to enable you to draw and position your work to an accuracy of one ten-thousandth of an inch.

Editing objects with *Professional Draw* requires that the object be *activated*. Activating an object tells the program which object you wish to change.

Activating Objects

To activate an object:



- Select the *Null Pointer* tool.

You *cannot* be using any other tool when you wish to activate an object! It’s easy to forget to change tools and find yourself

creating another object when you meant only to change an existing one. Another way to “put down” a drawing tool without having to physically select the *Null Pointer* tool is simply to strike the RETURN key once an object has been completed.

- Move the pointer over the object you wish to activate.

The pointer must lie on the line defining the object; if it lies on top of the object’s fill area, for example, it will not activate the object. The sole exception to this rule is the center control point of ellipses. If you can accurately gauge where this point lies, and click on it, the ellipse will become active.

- Click the left mouse button. *Professional Draw* indicates that the object is active by revealing its control points, small black squares.

To activate several objects:

- Selected the *Null Pointer* tool.
- Press and hold the SHIFT key.
- Place the pointer on one of the inactive objects, as described above, and click the left mouse button.
- Keeping the SHIFT key depressed, move the pointer to the other objects, clicking the left mouse button to select them. All the objects made active will reveal their control points.

Alternatively, the *Marquee* tool can be used to select several objects at one time:

- Select the *Marquee* tool in the general tools section of the tool palette.
- Move the crosshairs to a location completely outside the area of the target object.
- Click the left mouse button and drag the crosshairs across the objects. As you do so, a box, or marquee, will be appear around the objects.



- When you are satisfied that the marquee lies outside the objects to be made active, click the left mouse button once more. Only those objects entirely within the marquee will be selected.

To select all of the objects on the page, select the *Select all* item in the *Objects* menu

The Editing Tools

Once an object has been activated, you are ready to use *Professional Draw*'s powerful editing tools. With the exception of the *Null Pointer* tool, these lie in the lowest section of the tool palette.

NOTE: At any time during an editing operation, you can press the ESC key to abort the current procedure. Also, striking the SPACEBAR will cause the screen to be redrawn.

The Null Pointer tool

The *Null Pointer* doesn't have a very exciting name but it is the chief tool in the palette provided by *Professional Draw*.

We have already discussed how the *Null Pointer* tool is used to activate objects. But it is also used to move objects and to change their shape.

To move an object:

- Move the pointer to any part of the object *except* a control point. If you place the pointer over a control point, you will change the object's shape, rather than merely moving it.
- Press and hold the left mouse button.
- Pick up the object by dragging it to its new position.
- Drop the object in place by releasing the left mouse button.
- *ESC* can be used to abort the move.



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You can move several objects at once. Select all the desired objects using either the *Marquee Tool* or the SHIFT key. Moving one of the active objects will then move all of them. The objects' position relative to each other will remain unchanged. If you wish to move only one object while many are selected, press the SHIFT key while moving the object with the *Null Pointer*.

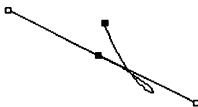
For complicated objects it may take some time to render the objects for moving. In this case you should select the "Quick Move" option in the "Preferences" menu. With "Quick Move" selected you will see only a bounding box for each object as you are moving it. Also, if memory is low *Professional Draw* will automatically put you into "Quick Move" mode.

Professional Draw also provides a method to precisely position your objects on the page. If you double click on the *Null Pointer* tool a requester will pop up which will allow you to enter (in the current units) the exact position of the upper left corner of the bounding box of the object. Click on *OK* when you are satisfied with the position.

To change an object's shape:

- Activate the desired object(s). The object's control points will be revealed.
- Move the pointer to a control point.
- Pick up the control point by pressing and holding the left mouse button.
- Keeping the mouse button pressed, drag the control point to the new position. The shape of the object will change accordingly.
- Drop the control point by releasing the left mouse button.

If the object whose control points you are manipulating is a Bezier curve, you will notice that

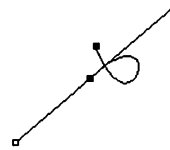


when you picked up the control point, *Professional Draw* revealed the tangent point(s) and the associated tangents. When you drop the control point, these remain until another control point is selected so that the slope of the tangent can be adjusted.

- Move the pointer to a tangent point at the end of the tangent.
- Pick up the tangent point by pressing and holding the left mouse button.
- Keeping the mouse button pressed, drag the tangent point until you are satisfied with the new curve.
- Drop the tangent point in place by releasing the mouse button.

NOTE: Three keys provide some additional control over tangents. If you press and hold the ALT key while dragging a tangent point, the slope of the tangent will be constrained to multiples of 45°. If you press and hold the SHIFT key when you select a tangent point, the tangents running through its control point will be split: normally, the angle between the tangent entering an control point and the tangent leaving the control point is preserved. The SHIFT key will let you put a “kink” in a curve. Selecting SHIFT when moving an control point will make the bezier from it to the previous bezier a straight line. Finally, pressing the left Amiga key will let you pick up a tangent point that overlaps an control point: normally, the control point would be picked instead. For more information on the use of constraints, see below and in the chapter on *Drawing Tools*.

The *Null Pointer* is also used to scale and crop bitmap objects. For more information on both the creation and manipulation of a bitmap object, see the chapter on *Bitmaps*.



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The sizing tool

This tool is used to change the horizontal and vertical size of an object. The effect is rather like adjusting the vertical and horizontal size controls on a television set. You can stretch the active object(s) up and down or flatten or fatten it sideways -- or both at once.

The key to using this tool lies in where you place the control points for the transformation. The following example demonstrates the use of this tool:

- Draw a rectangle with the *Rectangle* tool.
- Select the *Sizing* tool and move the crosshairs to one corner of the rectangle.
- Drop the origin point by clicking the left mouse button.
- Move the crosshairs to another point on the page and press and hold the left mouse button. It's advisable to place this second point a good distance from the control point. If it is inside, the scaling effect can be very dramatic and may be difficult to control.
- Keeping the left mouse button pressed, drag the crosshairs away from the second point until satisfied with the horizontal and vertical dimensions of the object.
- If 'Quick Move' is selected, you will see a bounding box for the object.
- The coordinates will show the relative scale from the original size.
- Hit ESC before releasing the mouse button to abort the sizing.

NOTE: Pressing and holding the ALT key while using the *Sizing Tool* will cause the object to be scaled by equal amounts in the X and Y directions.

To scale an object more precisely, you may do it numerically. To do this:

- Make sure the object is activated using the *Null Pointer* tool.
- Double-click on the sizing tool. This will pop up a requester that will allow you to enter a percentage value for the X and Y axes.
- Type in scaling values in the string gadgets of the requesters and or click on the *OK* gadget.

Once this is done, the object will be redrawn with the X and Y dimensions scaled by these percentages about the center of the object. Note also that it is possible to have negative scaling: negative values will invert the object.

The Rotation tool

This tool is used to rotate the active object(s) about a point on the page. It does not effect the object's shape or size, only its angle.

To rotate an object

- Make sure the object is activated using the *Null Pointer* tool.
- Select the rotation tool and move the crosshairs to the desired rotation axis.
- Move the crosshairs to another point and press and hold the left mouse button.
- Drag the crosshairs in the direction in which you wish to rotate the object.
- When you are satisfied with the new position of the object, drop it in place by releasing the left mouse button.
- The coordinates will show the angle from the original position.



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- Hit ESC before releasing the mouse button to abort the rotation.

NOTE: Pressing and holding the ALT key will constrain the *Rotation Tool* to multiples of 45°.

Like the *Scaling* tool, the *Rotation* tool can be used numerically. To do this:

- Make sure the object is activated using the *Null Pointer* tool.
- Double-click on the *Rotation* tool. This will bring up a requester.
- Enter a value in degrees in the string gadget of the requester and press RETURN or click on the *OK* gadget. Negative values can be used here also.

Professional Draw will rotate the object about its center point by the specified number of degrees. Positive angles goes counter clockwise.

The Mirror tool



The mirror tool produces a mirror-image of the activated object(s).

- Make sure the objects are activated.
- Select the *Mirror* tool and move the crosshairs to a position over the page.
- Drop the origin point by clicking the left mouse button. This point will serve as the center of the rotation of the mirror.
- Move the crosshairs to another point on the page and press and hold the left mouse button. A line will appear. This is a visual guide only. It represents the surface of the mirror and is not part of the drawing.
- Drag the crosshairs in the direction in which you wish to rotate the mirror.
- When you are satisfied with the new position of the object, drop it in place by releasing the left mouse button.

- The coordinates will show the angle of rotation.
- Use ESC before releasing the mouse button to abort the rotation.

Note: Pressing and holding the ALT key will constrain the mirror line to rotations of multiples of 45°.

The Distortion tool

The *Distortion* tool provides a fascinating means for changing an object's shape:

- Make sure the object is activated using the *Null Pointer* tool.
- Select the *Distortion* tool. A rectangle with control points on each side and in each corner will appear around the object.

To distort the object:

- Place the crosshairs over one of the control points on the rectangle and pick it up by pressing and holding the left mouse button.
- Drag the control point to another position. As you do so, the side or corner of the rectangle associated with the control point will be s-t-r-e-t-c-h-e-d out of shape.
- Release the left mouse button.
- Hold down the SHIFT key while moving a corner point will make the two sides attached to the corner, a straight line.
- Hold down the ALT key and the distortion is vertically symmetrical.
- Hold down the CONTROL key and the distortion is Horizontally symmetrical
- Hit ESC before releasing the mouse button to abort the distortion.



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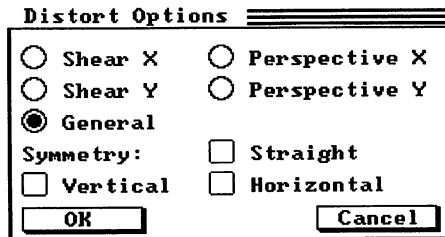
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Think of the rectangle as a rubber sheet on which the object is printed. As a side or corner of the sheet is pulled, the shape of the object is distorted. To see the effect on the object, you must refresh the display by striking the SPACEBAR. When you are satisfied, select another tool. If you want to abort the distortion, strike the ESC key.

When you double click on the *distortion tool* a requester appears that allows you to modify the the type of distortion. The top of the requester has a group of round buttons that allows selection of one of the distortion types; Shear X, Shear Y, Perspective X, or Perspective Y. The General Button is the standard default mode of the tool. The bottom of the requestor has the square buttons that allow you to select one or more of the key-board constraints mentioned above; Straight, Horizontal and Vertical.

The hook tool

This tool allows you to add another control point to a Bezier-type object, such as a curve or rectangle, for more control of its shape.

To add a control point:

- Make sure the object is activated.
- Select the *Hook* tool and move the crosshairs to the point on the object where you want to drop the new control point.
- If you press and hold the left mouse button, *Professional Draw* will place a new control point onto the object.
- Keeping the left mouse button pressed, drag the crosshairs if you wish to alter the slope of the tangent. The ALT key can be used to constrain the tangent to multiples of 45°. The SHIFT key will uncouple the two tangents.

- Release the left mouse button when you are satisfied.

By selecting the *Null Pointer* tool, you can now move the new control point like any other to alter the shape of the curve.

The Cutting tool

The *Cutting* tool enables you to sever the chain of control points that make up a Bezier object. One object can thus be broken into several smaller objects.

To cut an object:

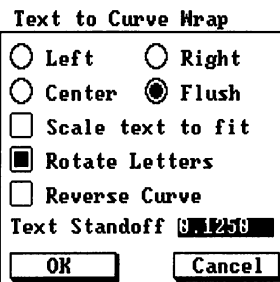
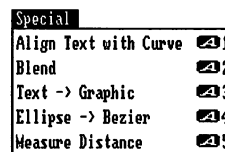
- Make sure the object is activated using the *Null Pointer* tool.
- Move the crosshairs over the control point at which you wish to cut the curve.
- Pick up the control point by pressing and holding the left mouse button
- Drag the control point to its new location and drop it by releasing the left mouse button.
- If you use the Alt key when clicking down, you can delete the control point without cutting the curve.

The Special Menu

Under the *special* menu are a number of special features, many of which modify the operation of the drawing tools.

Align Text to Curve

This feature modifies a string of text to follow a defined path. This path can be any shape and is drawn with the *Pen Tool*. The text can be set to flow onto the path flush *Left*, flush *Right*, *Centered*, and *Flush* left and right. When the *Flush* left and right option is selected the *Scale to fit* modification is active and the letters will be resized to fit along the path defined from end to end. The letters can be made to rotate around so that they are



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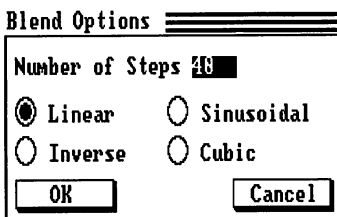
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always at a right angle to the path, with the *Rotate Letters* modifier. The *Reverse Curve* modifier will set the text along the inside of the curve from the end point to the start point. This is an easy way to get text inside a circle. The Align Text to Curve feature will not function if you have converted the letters to graphics.

Blends

The blend functions in *Professional Draw* provide two very strong features; the ability to transform objects and the ability to create color blends. Color blends are created in a linear fashion, like in most paint packages. Since *Professional Draw* is not limited by a fixed number of paint pots, your blends can be in as many steps as needed for the effect. For example it is easy to create a graduated background from light blue to dark maroon in 30 steps.

The second part of the *Blend* function is to alter shapes. There are a number of mathematical equations available for these transformations. Each of these works from the first selected object to the second selected object.



Linear: will transform an object evenly through the specified number of steps.

Inverse: will transform the object through incrementally wider spaced steps; think of the famous perspective image of the railroad ties and tracks into the horizon, the ties are closer together at the horizon.

Sinusoidal: the blend here is based on a sine curve. The progression gives a rather circular feel to the way the objects transform.

Cubic: the objects transformed with this function appear to become closer together in the middle and then as if they have been mirrored. That is to say the blend goes to the halfway point and then is mirrored on the other side.

It is suggested that you complete the examples in the tutorial section to see how these effects work.

Text --> Graphic

This converts text, with a single control point to a compound object which can be edited.

Ellipse --> Bezier

This is also a conversion utility for converting ellipses and circles to bezier objects that can be edited like any other object.

Measure Distance

This tool allows you to measure precisely the distance between two points on the page. When the item is selected, the pointer turns into a cross-hair. Position the cross-hair over a point on the page, click with the left mouse button, and move the cross hair to a second point. The horizontal and vertical offset of the second point from the first will appear in the title bar, as well as the absolute distance between the two points. Clicking again cancels the *Measure Distance* mode.

Changing Attributes

As discussed in detail in the chapter on *Objects*, attributes are those features of an object that characterize it besides size and shape. These features consist of line weight, line pattern, fill or no fill, ink color, fill color, line join and layer.

Professional Draw provides for editing of attributes via menus. The object whose attributes are to be changed must be selected. If several objects have been selected, all will have their attributes affected by any change. If, for example, several objects have been selected that all have different line weights, and the line weight is changed to 2 points, then all the objects will be redrawn to have line weights of 2 points. (All other attributes will however, remain as they are.)

When an attribute of an activated object is altered via a menu selection, *Professional Draw* will re-draw that

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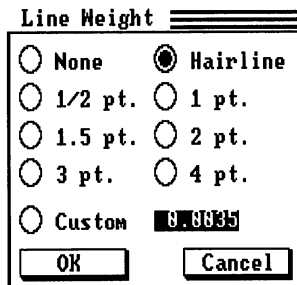
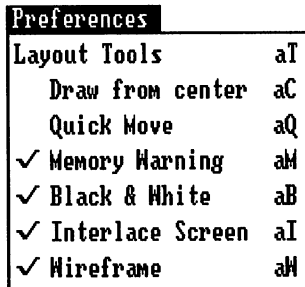
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object to reflect the change, unless you have selected *Wireframe* in the *Preferences* menu

An object's attributes will not be displayed if the *Wireframe* item in the *Preferences* menu has been selected. Only the size and shape of the objects are displayed, using lines that are one pixel (picture element) thick. This mode is useful if you want the drawing speeds to be as fast as possible. It is also highly recommended if you are tracing over bitmaps.

You can switch between *Wireframe* and *non-Wireframe* at any time.

Changing line weight

To change the line weight, or thickness, of an object:

- Make sure the object is activated.
- Press and hold the right mouse button and drag the pointer to the *Line Weight* item under the *Attributes* menu.
- Select the item by releasing the right mouse button. A requester will appear displaying a variety of line weights.
- Click the left mouse button on the line weight you prefer and click on the *OK* gadget to clear the requester.
- If you select the *Custom* line weight gadget, you can type in the value you desire in the current units into the string gadget. Click on the *OK* gadget to satisfy the requester.

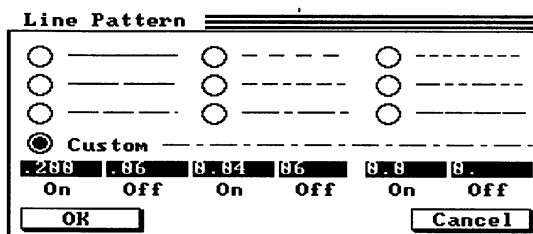
Changing line pattern

To change the line drawing pattern of an object:

- Make sure the object is activated.
- Press and hold the right mouse button and drag the pointer to the *Line Pattern* item under the *Attributes* menu.
- Select the item by releasing the right mouse button. A requester will appear displaying a variety of line patterns.

- Click the left mouse button on the line pattern you prefer and click on the *OK* gadget to clear the requester.

- If you select the *Custom* line weight gadget, you can design your own line pattern. You can type in up to six values in the string gadgets that represent the on and off parts of the line. Each value tells the program how long each on or off section should be in the current units. Click on the *OK* gadget when you are satisfied.



Changing line joins

To change the type of line join used in an object:

- Make sure the object is activated.
- Press and hold the right mouse button and drag the pointer to the *Line Joins* item under the *Attributes* menu. A sub-menu of different line join types will appear.
- Drag the pointer to the desired line join type and release the mouse button.

Fill or no fill?

To change the fill state of an object:

- Make sure the object is activated.
- Press and hold the right mouse button and drag the pointer to the *Fill* item under the *Attributes* menu. If there is a checkmark next to the *Fill* item, it is on.
- If you wish to switch, or toggle, the fill state, select the *Fill* item by releasing the right mouse button.

Changing ink and fill colors

You can modify the ink and fill colors, or even mix your own colors, using the selections provided by the *Attributes* menu. A brief summary of its features is

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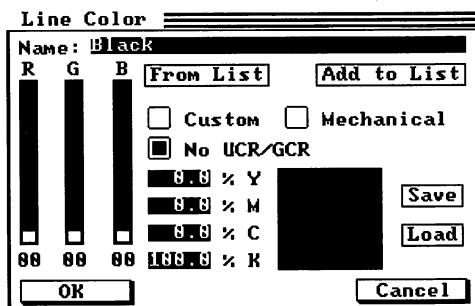
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provided here; for more detailed information, refer to the chapter on *Color*.

To change the ink or fill color used to draw a particular object:



- Make sure the object is activated.
- Drag the pointer to the *Line Color* or *Fill Color* item in the *Attributes* menu. A requester will appear containing RGB sliders, YMCK values, and a variety of different gadgets. Click on the "From List" gadget.
- A list of pre-defined colors will appear. You can select any of these colors by clicking on it and then clicking on the "OK" button.
- The Selected color will appear in the large color preview box. Click on "OK" to complete your selection.

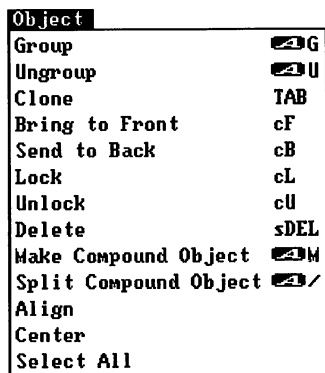
Alternatively, you can adjust the RGB sliders or enter your own YMCK values to create your own custom colors, which can be added to the list of pre-defined colors by clicking on the "Add to List" button.

The Object Menu

The *Object* menu also provides some important editing functions. These capabilities are described briefly below; for more detailed information, consult the chapter on *Objects*.

Grouping

Suppose you have created an image that consists of a number of objects: a drawing of a tricycle, let's say. Now perhaps you wish to move the tricycle. Clearly, it would be very awkward to move every component of the tricycle. The solution is to treat the multi-object drawing of the tricycle as a single entity -- a tricycle object, in other words. This process is called *grouping*.



To group objects, you must first activate the ones you wish to group. This operation, called *extended select*, can be done with the *Marquee* tool or by holding the **SHIFT** key down while you select the objects with the *Null Pointer* tool, as described above. When all the desired objects are activated, select the *Group* item in the *Object* menu.

From this point on, *Professional Draw* will see the grouped objects as only one object: selecting one part of the tricycle will select all of the tricycle. The whole tricycle can be manipulated with the editing tools in exactly the same fashion as, say, a simple rectangle: truly a powerful capability.

You can have many grouped objects in one drawing. Unlike objects that have been extended-selected, a grouped object stays grouped even when it is not selected. The group will remain intact until specifically ungrouped. Text, for example, consists of letters that are themselves grouped objects. In fact, you can ungroup individual letters and edit their components.

Ungrouping

Ungrouping reverses the grouping operation: it breaks up a grouped object back into its constituent objects.

To do this, make sure the grouped object is activated and select the *Ungroup* item from the *Object* menu.

Cloning

“Cloning” simply means producing an identical copy of the active object(s). By varying the way new copies of an object are placed on the page, complex objects can easily be created from very simple objects.

To clone an object:

- Make sure the object you wish to clone is activated.
- Select the *Clone* item in the *Object* menu.
- The *Object Clone Options* requester will pop up.



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Object Clone Options

☒ Shift	X: 0.0000	Y: 0.0000
☒ Scale	X: 100.000	Y: 100.000
	center X: 1	Y: 5
☐ Use Object center		
☒ Rotate	angle: 0.000 °	
	center X: 0.0000	Y: 0.0000
☒ Use Object center		
OK		Cancel

Shift

Shift determines the offset the new cloned object will have from the original object. Shift can be toggled on or off.

Scale

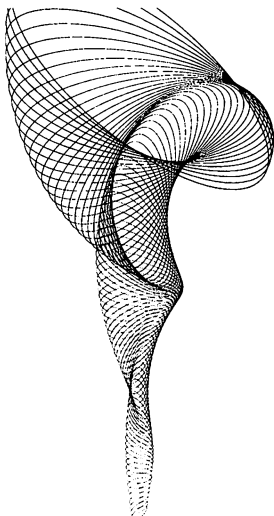
Scaling allows you to produced a scaled, or re-sized clone of the original. Values for x and y are displayed as a percentage and can be set independantly, allowing for

some interesting effects. By default, the object is scaled from its center point. You may, however, indicate an alternate scaling point by de-selecting the *Use Object Center* option and typing in specific coordinates in the *center x* and *y* boxes. Scaling may be toggled on or off.

Rotate

A cloned object may also appear rotated. Cloned objects are rotated about their center by default, but may be rotated about any arbitrary point on the page by de-selecting the *Use Object Center* option and typing in your own coordinates in the *center x* and *y* boxes. The amount of rotation (measured in degrees) may be indicated by selecting the *Rotate* option and typing in a rotation value. Rotation may be toggled on or off.

Each of the cloning parameters gives you control over a specific type of change in the object's appearance, but the real power of this requester becomes apparent when many different parameters are used together. For example, the picture at left was created with a slightly downward Y-Shift, 98% X and Y Scaling about the object's center, and five degrees of rotation about the object's center. The settings were typed in once, and subsequent "clonings" were accomplished by holding down the Shift-TAB key combination.



NOTE: There's a shortcut to cloning objects: you can copy any object you are manipulating with an editing tool by striking the TAB key. If, for example, you are using the *Null Pointer* tool to drag a circle across the page, *Professional Draw* will drop a copy of that circle in its current position whenever you strike the TAB key. If you have selected an object on the page, hitting the TAB key will cause *Professional Draw* to draw an exact duplicate of the activated object(s) a little to the right and down the screen from the original. The cloning operation can be repeated as many times as memory permits. By holding down the shift key and striking TAB, you can apply the options set in the *Object Clone Options* requester.

Layering objects

It is perfectly possible to draw one object over another. This is called layering. Indeed, an indefinite number of layers can be created. The *Bring to front* and *Send to back* items of the *Object* menu permit you to rearrange the way several objects are layered.

If you wish to push one object to the bottom of a stack of overlapping objects, activate the object first with the *Null Pointer* tool and then select the *Send to back* item. Contrariwise, should you wish to pull one object out from behind another, activate the desired object and then select *Bring to front*. *Professional Draw* will redraw the object on top of the other object.

Locking/Unlocking objects

Locked objects cannot be deleted or edited in any way. Their attributes are also locked. Locked objects appear with hollow squares at their control points, when selected. Objects are locked by selecting *Object/Lock* and unlocked by selecting *Object/Unlock*.

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Deleting objects

Make sure the activated object is the object you wish to delete. Then select the *Delete* menu item. A requester will pop up just to double-check that that is indeed what you wish to do. If so, click the left mouse button on the *Yes* gadget (or press the *Return Key*) and *Professional Draw* will erase the object.

You can delete active objects with the keyboard rather than the *Object* menu. Pressing and holding the SHIFT key and striking the BACK SPACE or DEL key has exactly the same effect as selecting the *Delete* item.

WARNING: Deleting an object erases it from the Amiga's memory. Unless it has been stored to disk, there is no recalling it!

Compound Objects

Objects may be created with inside and outside edges, such as a donut, through the use of the *Make Compound Object* item. Group the two objects that you wish to use to form a compound object with the Group tool, and select *Make Compound Object*. You can create transparency in compound objects by filling one of the objects before merging with the other. Compound objects may be split back into their original objects with the *Split Compound Object* item.

Align

Use the Align feature when you wish to align a group of objects on the page either by the top, bottom, left or right edges.

- Select the objects using either the mouse or the *Marquee* tool.
- Select the *Align* option from the *Object* menu. You can align the objects along the top, bottom or either side, by selecting the appropriate sub-menu.

Center

Centering objects or groups is easily accomplished with the *Object/Center* function. You can center objects on either the horizontal or vertical axis or both.

- Select the objects using either the mouse or the Marquee group tool.
- Use the *Object/Center/Vertical* to center along the vertical axis.
- Use the *Object/Center/Horizontal* to center along the horizontal axis.
- Use the *Object/Center/Both* to center along the both axes.

Select All

All of the objects on the current page may be selected at once with the *Select All* item.

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8 TEXT

The arrival of the phototypesetting machine in the early sixties revolutionized the art and science of typography. Before this time, type was made from lead, which had to be either melted and poured into molds, or stamped, one line at a time, in a huge machine.

The phototypesetting machine produces type photographically. It works in a fashion similar to a slide projector: light shines through a mask that contains an outline image of a character onto light-sensitive film. The resulting image can easily be made smaller or larger, negative or positive, dark or light. Changing typefaces is simply a matter of changing masks.

Other, more elaborate effects become possible. By adjusting the position of the masks or the projection lens or both, the phototypesetter can *distort* the type, fattening it or tilting it or stretching it... Type has now become a graphic tool that, in the hands of a good designer, conveys more than mere words. This still requires, however, a skilled operator of the equipment.

The process lends itself well to computer control and indeed, the vast majority of print today is created with computer-controlled phototypesetting machines. The arrival of the microcomputer put computer power in the hands of individuals rather than

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departments. The Amiga, and other powerful personal computers, has put the power of a phototypesetting machine directly in the hands of artists and designers.

Structured Text

Text in *Professional Draw* is treated as *structured* text. Every letter is built up from smaller graphic objects: the letter B, for example, is actually a compound object made up of three sub-objects. Each letter can be edited just like any other object in *Professional Draw* -- sized, colored, distorted, rotated, or even grouped with other letters.

Professional Draw is supplied with two fonts, a *sans serif* outline font, Triumvirate and a *serif* outline font, Times. They are called outline fonts because, like other structured graphics, they are stored as a series of line-drawing procedures. Using the sub-menu *Text --> Graphic* in the *Special Menu* you can convert the text to graphic objects and edit the shape like any structured object. And, like other structured objects they can be filled or not filled. Filling them, of course, makes them look like the typefaces we are all used to; except that *Professional Draw* lets you fill them with any color you define.

Using the Text Tool

The *Text* tool lies immediately to the right of the *Pen* tool and just below the large page position gadget. You select it by moving the pointer over it and clicking on it with the left mouse button. When you move the pointer over the page, the pointer turns into a vertical bar, hereafter referred to as the text pointer.

To place text on the page:

- Move the text pointer over the page to the place where you want the baseline of the text to be and



click the left mouse button.

- A requester will pop up. This requester contains the list of fonts available. If you have purchased the CG Fonts disks from Gold Disk you will be able to choose from a wider variety of typefaces.

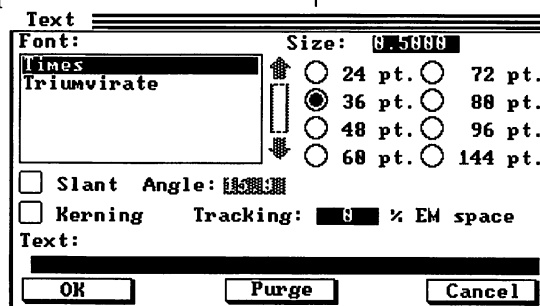
- If you have not already done so, select the font you wish to use by clicking on it with the left mouse button.

- Set the size of the type by clicking on one of the *Type Size* gadgets or on the text bar if you wish to enter a custom size. If you have set *Preferences* to be in picas the text bar will show your size in picas and points; for example 2.8 really means 2 picas and 8 points. (If you enter a numerical value of 2.14 it will change to read 3.2 because there are 12 points to a pica.) Strike the RETURN key or select another gadget when you are finished.

- Near the bottom of the requester is a string gadget for the text you wish to place. Click on this gadget and type the text into it.

As you can see, there is room only for a few words (up to 256 characters). A new line is indicated by typing in '\n' as part of the text. While *Professional Draw* provides you with virtually infinite control over text, it is not a text layout program -- that's *Professional Page's* forté. *Professional Draw's* text capabilities are intended for the short series of words used in headlines and signs, for example.

- You also have the option of obliquing, or *slanting* the text. While this is not a true italic, it is an interesting effect, since it looks like the tops of the letters have been pushed to the right, or if you enter



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a negative value, you will produce a back slant, with the tops of the letters pushed to the left.

- Also on the text requester are two more Typographic options. KERNING allows the typeface to use the tables of Kerning pairs stored within. TRACKING allows you to adjust the amount of letter-spacing between all of the letters in your string of text. A negative value will set the letters closer together, while a positive number will set the letters farther apart. The unit of measure used in tracking is based on a percentage of the point size, which is added or subtracted from the overall widths. Since the letter M is considered to be the widest letter in the alphabet, it is designed to be as wide as it is tall. The width of all other letters, numbers and punctuation are based this formula of EM's.
- When you are satisfied with the text, click the left mouse button on the *OK* gadget to close the requester.
- When you are done placing all of your text, it is a good idea to use the Purge button. The Purge button will clear all typefaces from memory, thus saving vital computer resources. Since the text on the screen is a structured object it will have no effect on the display. If you do need to add text later *Professional Draw* will reload the typefaces.

Professional Draw will render the text, with it's baseline at the point you set down. *Professional Draw* will not render characters off the page. If a character would fall off the page *Professional Draw* will automatically insert a new line so that the character is rendered below the first character on the line above. Any characters that do not fit onto the bottom of the page will not be rendered. If the characters are not rendered as you expected simply hit SHIFT-DEL to

delete the text and repeat the previous steps.

The letters will be extended-selected so that if you wish to move them, you can move them all at once. The line weight, ink color and other attributes of the text will be as they were immediately before the *Text* tool was selected; as they are when any type of object is created, in fact.

Editing text

As mentioned above, the text object can be edited graphically like any other object:

- Select the text you wish to edit.
- Choose *Text* --> *Graphic* under the *Special Menu*
- Select the editing tool you wish to use to alter the text.
- Alternatively, change attributes by selecting the appropriate menu item.

Because the text is treated as a structured drawing, in order to change the text or its fonts, you must delete the existing text and re-enter it using the *Text* tool with the desired attributes.

Aligning Text With Curve

In the *Special Menu* is a text modifier that sets your string of text to follow a drawn path. For more information see the section on *Editing*.

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9. BITMAPS

Professional Draw allows you to make use of any IFF-compatible bitmap graphic. Graphics can be any size, depending only on available memory. Graphics may also be in any resolution mode (Low, Medium, Interlace, or High), and with any number of colors from 2 to 4096 at one time including Amiga HAM mode.

Black and White Output

Graphics can be output as black and white halftones in sixteen gray scales from any PostScript compatible laser printer or typesetting machine or graphics capable dot matrix printers.

Color Output

With *Professional Draw*, color graphics may be printed to color dot matrix printers, color Postscript devices, or can be color separated using a PostScript compatible laser printer or typesetting machine.

Screen Display

Color bitmap graphics are not displayed on the Professional Draw screen in color. A four gray-tone representation of the graphic is created in color mode, and a dithered half tone is used in the *Black and White* mode. Full color information is used when bitmaps are output.

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Default Size

When the graphic is imported, it appears at a default size of 75 pixels per inch (for example, a 640 by 400 pixel picture will fill the whole width of an 8.5 inch page). The graphic can then be rescaled or resized. Graphics created with Gold Disk's Pro-Scan Black and White scanner will retain their original aspect ratio

Altering the Graphic Parameters

You can crop and resize your bitmap graphics in Professional Draw.

Cropping

Using the handles on the graphic box, you can adjust the box to cover or reveal as much of the graphic as you wish. If you need to move the graphic within its box, drag the graphic around with the pointer while holding the ALT key down. This moves the graphic around inside the box without moving the box outline.

Sizing

To resize the graphic box, hold down the ALT-key and change the size of the box by dragging a handle.

- The coordinates show the scale relative to the original size.
- To ensure a picture prints at the same aspect ratio at which it appears on the screen in programs such as DPaint, you should use a Y-scale of 1.16 for Hi-res (640x400) or Lo-res (320x200) pictures and a scale of 2.32 for Med-res (640x200) pictures.

Tracing

Bitmaps may be traced manually with the structured drawing tools to produce structured objects. However, the *Trace* program on the *Professional Draw* disk will do this automatically. See Appendix F for details.

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10. CLIPS

Clips deserve a chapter to themselves, for they can be crucial to increased productivity with *Professional Draw*.

Clips are individual drawings in a library of drawings that can be loaded into *Professional Draw*. Any clip contained in the library can be copied at will to the page on which you are working or to the artboard.

The *Clips* menu provides you with the ability to manage and create your own libraries of commonly-used objects. If, for example, you regularly use *Professional Draw* to create floor plans, you can create a clip library of commonly used furniture and fixtures: armchairs, sofas, toilets, lamps -- everything *including* the kitchen sink. Each one of these can then be dropped in anywhere in a new drawing and edited to fit.

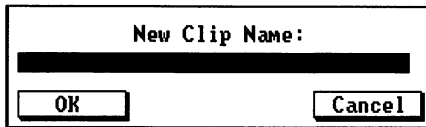
Any object, or extended set of objects, can be saved as a clip to a library. However, it must, as usual, be the active object:

- Using the *Null Pointer* tool, select the object you wish to clip.
- Select the *Define* item in the *Clips* menu.

A requester will pop up, asking you to enter a name for the clip.

- Click on the string gadget and type in the name.
- Press the RETURN key or click on the *OK* gadget when you are finished.

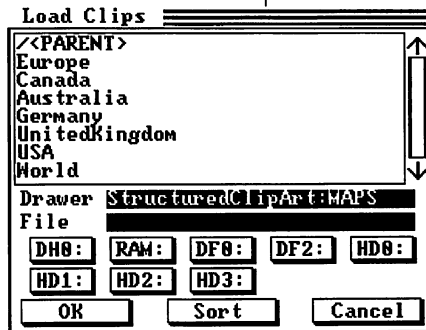




The object has now been added to the current library of clips. You can add others in the same fashion, limited only by the amount of memory available. You can also

delete clips from the library at any time -- more on this below.

To drop a copy of a clip into your current page:



- Select *Draw* from the *Clips* menu.
- A list of all the current clips in memory will appear.
- Click on the clip you want to render onto the page and hit the "OK" button.

A copy of the clip will now be “attached” to your mouse cursor: as you move the crosshairs, it will move with them until you click the left mouse button to drop it onto

the page.

A clip can be drawn at any time: the tool you were using before you placed the clip will be the tool you have after the clip operation has completed,

Professional Draw remembers what you were doing.

Selected (highlighted) clips can be deleted by selecting the delete item in the *Clips* menu.

If you have added a number of parts to the current library, you may wish to save it:

- Select the *Save* item in the *Clips* menu. A file requester will pop up.
- Click on the *File* string gadget and type in the name you wish to use for the current library.
- Press the RETURN key or click on the *OK* gadget when finished. The library will be stored.

If you wish to load a library of clips into *Professional Draw*, the procedure is much the same:

- Select the *Load* item in the *Clips* menu. A file requester will pop up.
- Click on the name of the clips library you wish to use or click on the string gadget at the bottom and type in the name.
- Press the RETURN key or click on the *OK* gadget when finished. Alternatively, simply double-click on the library name. In either case, the library will be added to the list of clips already defined.

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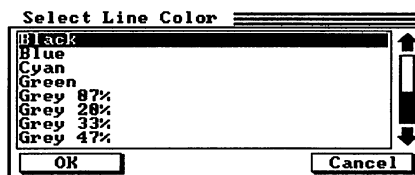
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11. COLOR

In addition to sophisticated use of black and white graphics and text, you can make use of color in the *Professional Draw* system in a variety of ways. This section describes how you can create and maintain a color database, and use color within *Professional Draw* documents.

The *Professional Draw* screen can display many colors on the screen at a time. You can choose from a list of pre-defined colors, or create your own with RGB sliders or YMCK values

Select the *Line Color* item in the *Attributes* menu. A requester will appear, allowing you to define your own colors, or choose from the list of pre-defined colors by clicking on the *From List* button. If you wish to add your own colors to the list, simply click on the "Add to List" button when you have finished creating a color.



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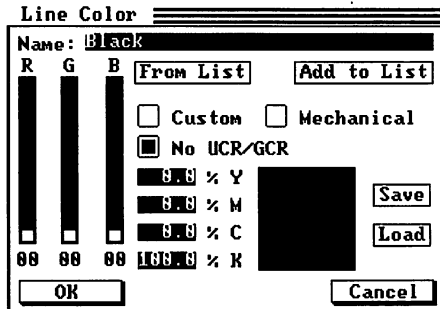
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RGB Color

Screen colors are defined in terms of RGB values. On the left side of the requester is a set of Red, Green, and Blue sliders. These sliders let you set any color from the Amiga's palette of 4096 colors. For example, moving the Red and Green sliders to the top, and the Blue sliders to the bottom creates a yellow color.

The color you define appears in the Current Color Display gadget on the right of the requester. You can name the color by clearing the Name text line and typing in the name of the new color.

When colors are created with the blend function, the system treats these as unnamed colors. You can choose one of these colors and add it to the color list by selecting it and choosing either color requester in order to name it and add it to the color list.

Yellow, Magenta, Cyan and Black

In printing, yellow, magenta, cyan, and black colors are used. Below and to the right of the *RGB* sliders are four small text lines labelled *Y*, *M*, *C* and *K*. These are linked to the RGB slider, and show the color separation equivalent of the computer's video colors. The *Yellow*, *Magenta*, *Cyan*, and *Black* text lines allow you to specify color information more precisely than it can be displayed on the screen. Type in the precise color values for each of the three color components, name the color, and save it to your document's color database (see below). When printing the document, *Professional Draw* will generate the the proper colors from the yellow, magenta, cyan and black information. You can use a process and/or pantone color simulator to enter precise values in the YMCK requesters.

Loading and Saving Colors

Click on the *Load* button in either the *Line Color* or the *Fill Color* requester. This will call up the *Load Color List* requester. Select the disk drive and directory you have designated for storing your color databases, and select the color database you wish to load. Colors are appended to the current list.

Similarly, when you want to save your current color database, click on the save button and use the *Save Color List as* requester to save your current color database.

Custom Color and Mechanical Color

There are three square buttons in the middle of the *Line Color / Fill Color* requester, labeled *Custom*, *Mechanical*, and *No UCR / GCR*.

A *Custom Color* is a yellow, magenta, cyan, or black combination to which you have assigned an arbitrary screen color. For instance, if you have created three very similar shades of blue by typing in the Y, M, C, and K values in the text lines, you can assign them radically different screen colors so that the shades will be easier to distinguish. The color defined by the YMCK values will be used in printing.

Mechanical Color indicates that the color that you select is not intended to be separated into black, yellow, magenta and cyan components. Rather, any page elements given a *Mechanical Color* value will be saved as one completely separate color, for printing. This only applies when color separation is performed.

Selecting *No UCR / GCR* will cause that color to ignore the UCR / GCR settings in the *Output* requester and instead separate normally. For more details on *UCR / GCR*, see the Printing chapter.

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Selecting colors

You can control the line color attribute and the fill color attribute of any object via the *Attribute* menu.

To set the color used to draw the object, select the *Line Color* item in the *Attributes* menu. The *Line Color* requester will appear. Click on the *From List* button to select the desired color from the current database.

The color used to fill objects can be selected in the same manner with the *Fill Color* item.

Once the color has been selected, it will apply to all objects drawn thereafter until it is changed again.

Changing colors

To change the line or fill color of an object, you must first select the object with the *Null Pointer* or the *Marquee* tool. Then select the fill or line color in the same manner described above. If several objects are selected, then all will have their colors changed when the line or fill color is changed.

Bitmap Graphics

Professional Draw can import any Amiga bitmap picture so long as it is saved in the IFF file standard. This includes pictures ranging from 1 pixel square to infinity (constrained only by available memory). Any number of colors from 2 to 4096 can be used including Amiga HAM, Extra Halfbrite, and 256 grey level pictures.

These bitmaps will be converted to 4 grey levels for screen display but all of the color information is retained by *Professional Draw* for later printing. See the chapter on *Bitmap Graphics* for more information.

12. PRINTING

It is easiest to learn and use *Professional Draw* if you have easy access to a printer to output your illustrations regularly as you create them. The program supports dot matrix and PostScript printers, as well as HPGL plotters.

Dot Matrix Printing

Professional Draw supports all graphic-capable printers in the AmigaDOS *Preferences* including color Ink Jet printers such as the HP PaintJet and the Xerox 4020.

Hooking up your printer

To hook up a dot matrix printer refer to the *Reference* section of your Amiga manual and follow the instructions on printer installation and settings. This includes selecting the appropriate printer driver from *Preferences* before running *Professional Draw*. If you require further assistance, your dealer will usually be able to provide further details, or call Gold Disk's technical support department.

Setting Dot Matrix Printer Specifications

When you select the *Print Dot Matrix* item in the *Project* menu, the *Print to Dot Matrix* requester appears. This allows you to

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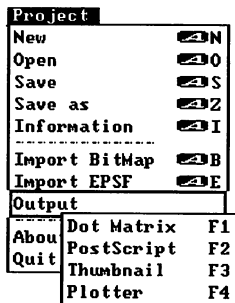
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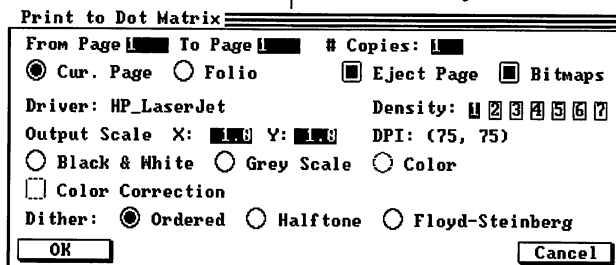
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specify the output parameters of the printer. Beside *Driver*, the printer name you have selected from the *Amiga Preferences* should be listed. (The requester will not appear if you do not have a graphics-capable dot matrix printer.) In addition to the ability to set the range of pages that will be printed and the number of copies of each, the requester provides the following print specification options.

- *Eject Page*, when selected, will cause the printer to perform a form feed after each page. For sheet oriented printers such as the HP LaserJet, this is necessary.



- Bitmaps, when not selected, will suppress the printing of bitmap objects.
- *Output Scale* allows you to enter horizontal and vertical scaling values to adjust the size of the page on printout .

It is recommended that you experiment with a number of scalings until you find one that works best with your printer.

- *Color Correction* is a function that assists in making the output of a color printer more closely match the *Professional Draw* screen image color representation.
- *Density* control of your printer's dots per inch (dpi) is given up to seven levels, for those dot matrix printers which have this many dpi selections. 1 represents the lowest dpi density of your printer, 2 represents the next highest density, and so on. The dpi selected is indicated next to *DPI*.
- *Black & White* only, *Gray Scale* and *Color* selection depends on the illustration being printed, the

capabilities of your printer and the desired output. These are similar to the options given in *Preferences*.

- *Dither* provides three options: *Ordered*, which creates bits with uniform placement of dark and light pixels; *Halftone*, which creates bits with dark or light pixels radiating from a central point. This emulates the dots of a halftone; and *Floyd-Steinberg*, which creates bits with a randomized placement of dark and light pixels.

When you are satisfied with the settings, select the *OK* gadget to print your illustration.

IMPORTANT: It is recommended that you experiment with various settings in the *Print to Dot Matrix* requester. Due to the many different characteristics of the printers listed in *Amiga Preferences*, different combinations of *Professional Draw* dot matrix printer specifications will achieve varying results from printer to printer.

To realize the ultimate potential of your printer, experiment until you find the specifications that provide optimum results. Once you have found the desired specifications, you can save an empty folio which will retain this information. This file can be used as a template, containing all pertinent, preferred settings, when creating new folios.

PostScript Printing

Professional Draw will output to any PostScript compatible laser printer, or to a PostScript compatible typesetting machine, such as a Linotronic 100 or 300 that is equipped with a PostScript RIP (Raster Image Processor).

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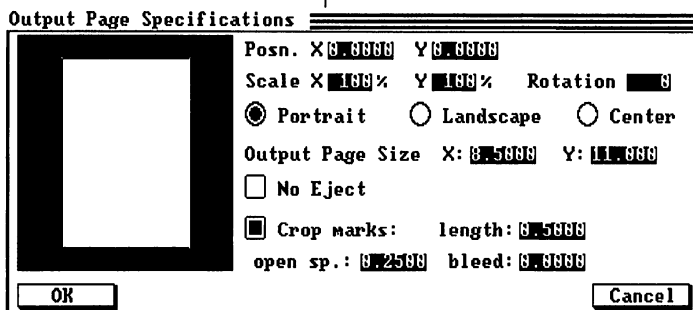
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Setting Printer Specifications

Professional Draw gives you a wide variety of printing options, including halftone screening, a variety of film and paper sizes, and page rotation. There are two menus that affect PostScript printing: *Project*, and *Page*. Some parameters affect the entire document, while others affect individual pages.

Printer Specifications in the *Pages* Menu

You may find it useful to change the print specifications of a particular page. You can rotate individual pages, and adjust the scale and position on the output page or film.



In the requester brought up by the *Create* or *Alter/Current* or *Alter/Default* items of the *Page* menu, select the *PostScript Print Specs* gadget. The requester contains a *Page Position* gadget for viewing the size and

orientation of the page. The printer output dimensions are indicated by a white rectangle.

Type the numerical values for *Position*, *Scale*, and *Rotation* (in degrees) into the appropriate text line, and press RETURN after each entry. The outline of your modified page will be superimposed over the white rectangle of the printer's output dimensions to show you what the page will look like when printed.

Clicking the *Portrait* button will set the rotation to 0 degrees and make the upper left of the folio page correspond with the upper left corner of the output page. The *Landscape* button sets the rotation to 270 degrees and again positions the upper left corner of the

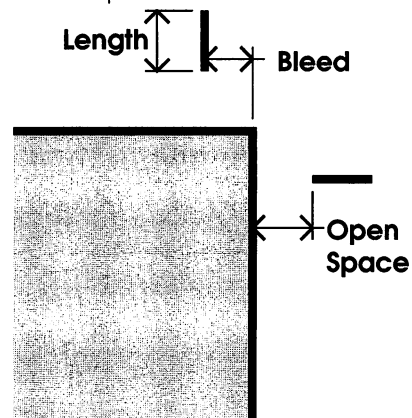
folio page. The *Center* button automatically centers the folio page on the output page. The *No Eject* button allows you to overlay successive pages in *Professional Draw*. When a page with "No Eject" on is printed the page is not ejected from the output device and the next page will be overlaid. The combined page is ejected when the next page with "No Eject" off is encountered or the last page is printed.

Output page size specifies the size of the output sheet and affects all pages in the folio.

Crop marks are optional and may be activated by clicking on the *Crop Marks* gadget.

Professional Draw allows you to alter the attributes of the crop marks:

- *Length* of the crop mark lines is 1/2 inch by default. Clicking on this gadget will allow you to type in another length.
- *Open Space* refers to the space from the edge of the page you are working on to the inside ends of the crop lines. The default setting is 0.25 inch. Clicking on the *Open Space* gadget will allow you to enter an open space figure.
- *Bleed* is a feature used when creating pages that have contents which extend to the extreme edges of the page. A larger, expanded page is usually created with the intent of trimming off portions of the outside edges to achieve the desired page size. The default setting is 0.
- Click on the *Bleed* gadget to enter a figure setting the distance from the edges of the expanded bleed page to the edges of the intended finished-product page. The crop mark lines will point to an intersecting point within the expanded page. This point is the corner of the trimmed page.



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Note: Crop marks will not be printed unless you leave room outside the *Professional Draw* page on the output page. To ensure this, make sure that your output page is larger than your folio page, and turn *Centre* on in the *Output Page Specifications* requester..

Printing a Document or Page

Select the *Print PostScript* item in the *Project* menu to

Print to PostScript

From Page To Page # Copies: ☐ EPSF

☒ Cur. Page ☐ Folio ☐ Manual Feed ☐ Negative ☐ Mirror

Output to ☐ Bitmaps ☐ Override Custom Specs.

☐ Roll Paper Width:

Ink Name:	Density	Angle	Process:
☒ Process Black	65.8891pi	45.8891°	☒ B&W ☐ 8 bit B&W
☐ Process Yellow	65.8891pi	45.8891°	☐ 3 Color
☐ Process Magenta	65.8891pi	45.8891°	☐ 4 Color ☐ Color PostScript
☐ Process Cyan	65.8891pi	45.8891°	

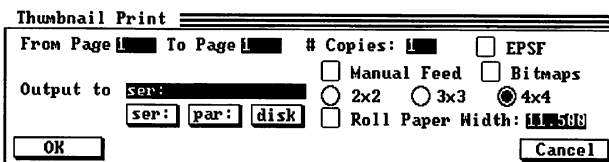
output pages to a PostScript printer. A requester will pop up to permit you to set: which pages of the current folio you wish to print and how many copies of each (you can also elect to

print the entire folio); the number of copies of each page; where to send the PostScript output; whether the device uses automatic or manual feed; whether bitmap printing is enabled; and whether to override custom settings. There is also an option to toggle eight bit output for 256 greyscale bitmaps

In order for the BitMaps to print properly on a PostScript printer it must be set to "PostScript Batch" operation. Please consult your printer's manual for details on how to set this mode. If you have a PostScript printer hooked directly up to you Amiga it will be connected to either the Serial or to the Parallel port. Select "ser:" or "par:" respectively as the output destination. You can save the PostScript output to a disk file for later printing (using the multi-tasking capabilities of the Amiga you could even print it at the same time) or if you want to send the output to a service bureau (see below) by clicking on the "disk" button. This will bring up a standard File Requester where you

can enter the destination file name. specifications is requested.

Print Thumb Nail can be used for proofing purposes, and will print either 4, 9, or 16 pages onto each output page.



Output Service Bureaus

If you do not own a PostScript compatible laser printer or typesetting machine, you can find instant printing or typesetting shops in most major centers which will sell PostScript output or rent output time. If an output service does not have an Amiga to hook up to their printer, it is possible to transmit a *Professional Draw* PostScript file to whatever personal computer the output service uses (such as an Apple Macintosh or an IBM PC) which can then send the file to the printer.

To make *Professional Draw* create a PostScript file to disk:

- Click on the *Disk:* gadget in the *Print to PostScript* requester. This will pop up a *PostScript output to file* requester.
- Either select the desired file from the list or click on the text bar and type it in yourself. Many people add .ps to the end of the filename to signify a file containing the PostScript prologue.
- Click *OK* in the file requester.
- Click on the *OK* gadget in the *Print to PostScript* requester. A window will appear on the screen indicating that the PostScript prologue is being recorded to the file, to be followed by the output of the PostScript code for the page or folio.

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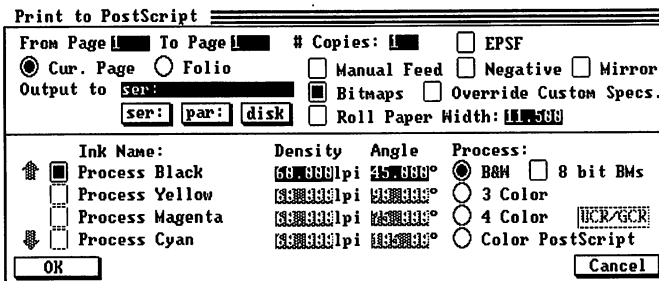
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Color separation

- Select *Output/PostScript* from the *Project* menu. This will bring up a *PostScript Output* requester.

- *3 color* and *4 color*

buttons pertain to how any non-mechanical color in the document is broken down to the process colors: yellow, magenta and cyan. Theoretically, the process colors should be able to combine to create black. However, many printers run a plate of black to boost contrast and saturate black page areas. The *3 color* option divides the full-color picture into the process component percentages without accounting for an extra black plate. The *4 color* option subtracts from the process color percentages an amount which will be included on a black separation. (A process called undercolor removal.)

- The UCR/GCR gadget allows you to control the amount of the three primary colors that is removed and added to the black layer in four color process separation. The actual amount of undercolor removal varies with each color, and is calculated as a percentage of the lowest process color amount of each color. For example, if a particular color consists of 50% yellow, 40% magenta, and 20% cyan, the lowest of these three values would be 20%. Specifying a UCR of 50% would yield a final UCR value of 10% (i.e. 50% of 20%). This value is subtracted from each process component. The resulting color would now consist of 40% yellow, 30% magenta, and 10% cyan. UCR / GCR can be selectively disabled for specific colors by setting the "No UCR / GCR" toggle when defining a color.

- GCR specifies the amount of grey to be printed out as a percentage of the lowest process color amount for each color. A GCR of 50% in the above example would yield a 10% black screen (again, 50% of 20%). The default settings for UCR/GCR are 50 and 100 per cent, respectively.
- The gadgets adjacent the various colors used to create your page are activated by default to output as separation pages. You may click on the gadgets if you decide not to output particular separation sheets.
- *Density* of the halftone screen is given in lines per inch. The default setting of 60 is a good setting for general separations (newspapers and newsletters typically use 85 lines per inch.) You may wish to increase the density to 133 lines per inch (a typical magazine density) for output on high-resolution devices such as a Linotronic 300.
- *Angle* of halftone screen are defaulted to the normal optimal settings for process colors. The default setting of 45° for additional color separation sheets may be adjusted for specific work by clicking in the gadget and typing a new value.
- Once you have selected the appropriate settings for your color separations, click on the *OK* gadget. A *Status: Color Separation* window will appear. This requester will monitor the progress of the color separation as the various sheets are output.

Registration marks

To ensure that individual separation sheets can be properly aligned by a printshop, *Professional Draw* automatically prints registration marks on the output sheets, outside of the page, midway along each side. The registration marks appear on every sheet when output pages are color separated.

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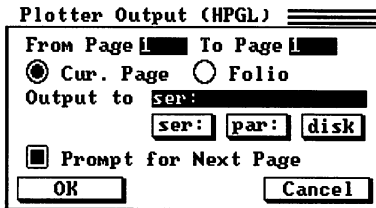
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In order for the registration marks to appear, you should choose an output pages size that is larger than the document page and choose *Center* in the *PostScript Output Specs* requester found in the *Create New Page* requester.

HPGL Output

Professional Draw pages and folios may be output to any HPGL plotter. Simply select the Output/Plotter item in the Project menu. As with Dot Matrix and Postscript output, the plotter requester gives you control over the page range, and device port. You may also have Professional Draw prompt you at the completion of each page if your plotter requires new paper.



13. ADVANCED APPLICATIONS

***Professional Draw* and Electronic Pre-Press**

Professional Draw fills a major gap in available Amiga software. By offering a wide range of color, PostScript drawing and text tools, *Professional Draw* meets an extremely important need for any designer or illustrator interested in desktop publishing on the Amiga.

Professional Draw's companion program *Professional Page* provides excellent support for Amiga bitmapped pictures, and has very good typographic and page layout controls, but its built in structured drawing tools are limited, especially where an artist wishes to create editable, smooth, high resolution, color images such as maps, technical illustrations, or corporate logos.

Commercial Opportunities

You will notice constant references throughout this section to using *Professional Draw* for creating "color separated film" for jobs that will be sent out for reproduction on a printing press. For most Amiga users and Amiga desktop publishers, this use of your computer for producing color separations is a rather unfamiliar business. However, even if you aren't yet using your Amiga for "high end" illustration and publishing (i.e. producing finished type

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and art for professional quality four-color printing), you should be aware of *Professional Draw*'s capabilities in this area. They may become very important to you as you become more adept at desktop publishing, and as you push your use of the computer to more demanding and lucrative applications.

There are a lot of references to "RGB" and "process" or "YMCK" (yellow, magenta, cyan and black) color in this section as well. Until recently, part of the "low end" focus of desktop publishing was due to its inability to handle color. One of the major commercial advantages of *Professional Draw* and *Professional Page* on the Amiga is their ability to produce color separated, screened film ready for burning a printing plate. An increasing volume of commercially printed material is in color, and as an Amiga user, you should exploit this market that the Amiga is now uniquely suited for.

Professional Draw, especially when used in conjunction with *Professional Page*, gives the Amiga user the ability to go from concept to finished, color separated, plate-ready film for many design and publishing tasks.

This means that with *Professional Draw*, *Professional Page* and your Amiga, you can avoid expensive scanning, color separation, stat camera, and film stripping work for a wider range of graphic design and production work than ever before. All of these phases of production can be concentrated on your Amiga. Final film output can be run from any PostScript output service, typically at a very much lower cost than color separated work done with any other method. With *Professional Draw* and *Professional Page*, your Amiga has the potential to be a very productive and profitable graphic workstation for print production. If you are running an instant printing, typesetting, or service bureau business, *Professional Draw* now makes the Amiga even more attractive either as a production terminal or to output customers' Amiga files from a Linotron or other PostScript compatible output device.

Planning your Job

To use *Professional Draw* most effectively, you should do some advance planning before you start creating an illustration with *Professional Draw*. First, you should create the rough layout for the completed page or document, so that each individual *Professional Draw* illustration can be created to fit the desired size box. If you are using *Professional Page* as your page layout program, you can make up a template or grid, and once this has been approved by the client, you will have a good idea of what proportions you'll need for a *Professional Draw* illustration. Making up an illustration before you have a clear idea how large or in what format it will be reproduced may mean having to re-do the illustration when you find out its final dimensions. Although *Professional Draw* will allow you to freely re-size the illustration, you should know the final reproduction size before you start so that, for example, details won't be printed out too small for the reader to see clearly.

Color and Color Proofing

You should also consider in advance what color palette the finished document will have. One palette can be defined and saved for use both by *Professional Page* and *Professional Draw*. Be warned, however, that the color screen display on your Amiga is only an approximation of the final printed job's color. The color balance of different Amiga monitors, adjusted differently, varies a great deal. Also, the Amiga can only display 4096 different colors, while *Professional Draw* will allow for one billion definable process colors, so the video color can't match the subtlety of the process colors.

Printing a color proof from the variety of color printers supported by *Professional Draw* will give you a rough idea of final color, but the accuracy of dot matrix color varies a lot.

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You should be very careful when you create color separated work with *Professional Page* and *Professional Draw*, especially when you start using it. In four color printing, mistakes can be rather expensive if they are discovered after 50,000 copies have been printed. Especially when fine color control is important, you are well advised to get a color key or chromalin (a very accurate color proof made from your color separated Linotron film). The proofs should be seen and approved in writing by the client, to check the color before the job goes onto a press. A further check of some test sheets off of the press, and signed approval from the client, is also a very good idea before the job is run in quantity.

A close study of color and printing technology, and the advice of experienced printers, will be a lot of help to you.

Gold Disk assumes no liability for any injuries or losses which may be attributed directly or indirectly to the use of *Professional Draw* or *Professional Page*. Experiment, carefully.

Creating Bitmaps

As described elsewhere, *Professional Draw* allows you to import a bitmap to use as a template for tracing your structured drawing. Bitmapped images can be created with video digitizers such as Digi-View, or paint programs such as Deluxe Paint or Deluxe PhotoLab. You have an enormous measure of control over what images you can create and use as a template. You can, for instance, digitize a setup of real objects, or people, or the image on a TV screen, and use any of those for templates. You can use image processing software such as Pix-Mate, or the Line Art mode of Digi-View, to make templates easier to trace by using the edge detection features to define a shape's edges more clearly. Paint packages such as Deluxe Paint III can be used to combine several images and distort or edit a

scanned photo. A 3D modelling package (such as Gold Disk's Design-3D) can produce a bitmapped image of a 3D view of a building or object, which can also be used for a template.

Trace

In addition to the ability to trace bitmap templates, *Professional Draw* offers an Auto-trace utility; *Trace*, to automatically convert IFF bitmaps ranging from line art to full color illustrations. The program speeds up such labour-intensive tracing applications as logo design and scanned-image conversion and opens up a wide variety of effects, such as posterization and color contouring. It is the fastest way possible to go from a bitmap to a smooth, jaggy-free structured object. See Appendix F for more details on Auto-tracing and the *Trace* utility.

Mixed Media (bitmaps and drawings combined)

You aren't limited to using bitmaps as templates and then discarding them. *Professional Draw* allows you to combine Amiga IFF bitmaps from other sources with structured illustrations created with *Professional Draw* and then to print out those combined bitmapped and structured images either as black and white or color separated paper or film, from within *Professional Draw* or *Professional Page*. The range of excellent digitizers and paint and animation packages for the Amiga mean that the bitmapped images you may wish to combine with *Professional Draw* can be created quickly and to a high standard of quality.

You might ask why, if one of the main advantages of *Professional Draw* is to eliminate the "jaggies" of bitmaps, you would even wish to combine smooth structured drawings with bitmaps. The answer is that for all their limited resolution, there are many useful features of bitmapped images that you may want to use. For example, you can wrap a scanned photo onto a shape using the texture mapping options of Deluxe

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PhotoLab. This image can be combined with a structured logo or outlines to give a much richer effect than you could achieve using only *Professional Draw*. And, of course, the finished result can be color separated as an integral part of a finished page. You can also, for example, use *Professional Draw* to draw around the rough edges of a bitmapped image to get rid of that most objectionable aspect of bitmaps, and still have access to the subtle color gradations and dithering that are possible with Amiga paint programs.

Also, you should keep in mind that while you can rotate and distort *Professional Draw* illustrations, within *Professional Draw*, you can't rotate or distort bitmaps within this program. If you want a mixed media image to be rotated, you should rotate the bitmapped image using a paint program such as Deluxe Paint, and then import that modified bitmap into *Professional Draw* and use the modified image as a template.

Mixing Amiga Bitmapped Palettes With *Professional Draw* Process Color Palettes

If you wish to combine bitmaps with *Professional Draw* drawings to produce color separations, you will have to be especially careful to plan your color palettes for both bitmaps and structured drawings in advance, though.

For example, let's suppose you wish to mask around a digitized photo of a person and drop the image onto a process cyan (light blue) background and then drop a corporate logo over it all.

The way that *Professional Page* and *Professional Draw* handle PostScript color requires that a bitmapped image be rectangular in shape. A polygon brush from Deluxe Paint, for example, will be seen by PostScript as a rectangle, and the area outside the edges of the polygon brush will print as an opaque white.

When you mask out the background of an image, the bitmap will fit seamlessly onto a process color background if the RGB color of the bitmap and the YMCK (yellow, magenta, cyan, and black) process color created with *Professional Draw* or *Professional Page* are identical.

First of all, determine what Amiga RGB color is closest to the cyan process color you want to use for the background. You can do this by selecting the *Define Color* option in *Professional Draw* or *Professional Page*, setting the YMC (Yellow, Magenta, and Cyan) values for the process cyan color, and then comparing this to the RGB (Amiga video) values shown on the RGB sliders to the left of the YMC selectors. Make a note of the RGB equivalent. You may have to adjust your process color slightly to make it match the RGB color exactly.

Drawing Complicated and Subtle Shapes

You may find that drawing with the "Pen" tool takes a good deal of practice to master. There are a number of ways to make it easier. First of all, you should practice creating complicated beziers by importing a drawing or scanned photo of a person or other living creature. If you practice extending a bezier curve in the direction where you will want it to be laid down (as is described in the earlier section on Beziers), you can quickly learn to estimate what angle to start the bezier at in order to get it to fit where you want it to go. When you lay the bezier down over the part of the template you want to outline, it probably won't fit exactly. Don't get upset. Just continue to draw beziers until you have finished roughly outlining the shape. Then press ESC to exit the Bezier drawing mode. To fit a bezier, click on its control point, and two tangent points will pop out. Move those handles to change the shape of the bezier until it fits the template.

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You will find that the more curves and changes of shape there are on the template, the shorter the bezier segments should be. In other words, do not try to bend a single Bezier segment to match several curves or changes of direction on the template image. Instead, make more, shorter beziers.

What if you have an idea for an illustration, and you don't have a bitmapped template? In a case such as this, one of the most useful tools is a digitizing tablet, such as the Easy1 pressure sensitive drawing tablet. You can sketch freehand or trace from a photo with a pencil and paper directly into *Professional Draw*, using *Professional Draw*'s freehand drawing mode. Once the outline sketch has been created, you can refine it further by editing it.

Alternatively, if you don't have a drawing tablet, you can rough out an illustration using the freehand drawing mode and the mouse, and use that as a simple template. After creating the finished illustration in more detail, you can delete the original sketchy under-drawing.

To sum up, remember the following general rules:

- Plan your illustration: the more you know about the layout and color schemes of the entire document, the better.
- Try to design the illustration carefully. The simpler and more economical the composition, the easier it is to create as a structured drawing.
- Use a drawing tablet, if you have one, for freehand drawing and tracing
- Prepare bitmapped images that you want to use as templates so that the outlines you wish to trace over are as easy to see and to draw over as possible. Complicated bitmaps should be Auto-traced.
- Keep the number of curves covered by a single bezier segment to the minimum. Make more, shorter bezier segments if you are having trouble fitting them accurately.

- Practice, so that you are familiar with how the various tools work. There is a good deal of new hand-eye coordination to be learned with this program. An intuitive "feel" for *Professional Draw*'s tools, gained through experience, will allow you to be more productive.

Page Layout Considerations

If you are intending to create a page with several illustrations (for example, a comic strip containing both bitmapped and structured elements), you may wish to create a rough layout within a bitmapped painting or design program such as Gold Disk's *ComicSetter* or *DeluxePaint*, and import that layout into *Professional Draw*.

You can create a grid within *Professional Page*, and determine in advance what proportions your bitmapped and/or *Professional Draw* illustrations need. Again, a little careful advance planning will help to ensure that the individual elements of a page will work well as a whole.

Importing *Professional Draw* Files into *Professional Page*

There are several things to consider when importing *Professional Draw* files into *Professional Page*:

- Make sure that the process colors for text and structured drawings created with *Professional Page* are compatible with the colors created with *Professional Draw*, and the colors of the bitmaps (see the section on color above).
- When you are importing a combined bitmap and structured drawing into *Professional Page*, keep in mind that they are two separate elements.
- You must import the *Professional Draw* picture and the bitmapped template separately, and re-position them together. To ensure that they fit precisely, make a note of the graphic scale of the bitmap and the

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Professional Draw image while you are working within *Professional Draw*.

- You should be careful about resizing a mixed media image. If you try to re-scale the two boxes visually, by grabbing the sizing handle of each box with the mouse pointer and pulling them one at a time, and pulling them, you may have trouble getting the bitmap and the structured element to the right size relative to each other. You should use the Graphic Scale option of the Box/Alter Current item to precisely scale each of the two boxes.

14. HINTS

The best way to learn to use *Professional Draw* efficiently is through experience. This chapter provides a few suggestions that will help make your work easier and more enjoyable.

Quicker Screen refresh

As mentioned before, it is strongly recommended that you turn on Wireframe mode when tracing over bitmap templates. This prevents the bitmap image from being refreshed every time the screen is redrawn, thus speeding up the display. Judicious use of the *Magnification* tool will also help with screen refreshes in almost every situation. Try to find the right magnification that lets you see clearly what you are doing, yet not force you to drag the pointer off the screen to complete a Bezier curve or other function. *Professional Draw* will scroll the page when the pointer reaches the edge of the screen and it must refresh the display to do this. If you are using bitmap graphics, or have a complex illustration, this can slow the refresh considerably. It can also makes it difficult to judge how far off the screen you have moved the pointer. Using Black and White mode in the *Preferences Menu* will also save on memory resources.

Double-Clicks in *Professional Draw*

Mouse operations can be speeded or enhanced with the use of

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double-clicking or extended selection. For example, rather than clicking on a name in a requester list (such as a list of colors, file names or clips) and then selecting the *OK* gadget, simply double-click on the name -- the selection will be made and the requester closed in one operation. Other uses made of double-clicking:

- After selecting the *Magnification* tool, double-clicking on any clear area of the page will zoom out, quadrupling the amount of the page shown. Double-clicking on the gadget itself will bring up a requester for numerical magnification values.
- Double-clicking on the *Null*, *Rotation*, *Sizing*, *Distortion*, and *Grid* tools will also pop requesters for numerical values.

Extended selection of Menus

Extended selection of menus makes it possible to select more than one item at a time. Instead of releasing the right mouse button to make your initial selection, click the left mouse button while holding down the right mouse button. Keeping the right mouse button pressed, move the mouse over the other menus, clicking the left mouse button over those you wish to select. When you are finished, release the right mouse button. All the selections will be acted upon, in the order they were made. You can use this capability, for example, to select the fill state, the center drawing mode, the ink color, the fill color and the line weight all at the same time.

Using bitmap templates

In addition to the previously mentioned use of Wireframe mode while tracing over bitmap templates, some things should be kept in mind. The simpler a bitmap graphic is in terms of composition, the better. A busy graphic can be difficult to trace. Consider editing a

bitmap graphic with a paint package to simplify it before importing it into *Professional Draw*. It may also help to remap the colors used in the bitmap graphic. *Professional Draw* changes them to their equivalent in grey scales but this may cause the border between some colors to become indistinct. If you make the colors more contrasting, they will be easier to trace.

File Name Conventions

Professional Draw save three types of files; Folios, made up of multiple pages; Pages and Clips (see the chapter on Clips for more information). It is a good idea to adhere to some common file name conventions. Even though the Amiga allows for very long file names, you may find it beneficial to keep your names brief and add a suffix. Some conventions already exist in the form of dot (.) suffixes. For example xxx.pic for bitmap pictures and xxxx.txt for text files.

- Save your Professional Draw folios with a “.folio” suffix (xxxxx.folio).
- Save your pages with a “.pdpage” suffix (xxxx.pdpage).
- Clips are saved in libraries which consist of individual objects or a clip. Name the defined object with the “.clip” suffix and each library with the “.clips” suffix. Group like libraries in subdirectories to help keep everything organized.

Low Memory Situations

Professional Draw requires at least 1 MB of memory to run properly and will monitor the amount of free memory as you work. If you encounter the Low Memory warning at any time there are several things you can do to free up more memory.

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- a) Since the Amiga is a multi-tasking machine, other processes may be consuming memory needlessly. You should close all other unnecessary windows and programs.
- b) The largest amount of memory is used by running Professional Draw in Color, Interlace, WYSIWYG mode. If you switch any or all of these options off you can save up to 160K Bytes of memory.
- c) If you have defined any Clips which you do not intend to use you should save them to disk and Delete them from memory (choose the *Clip/Delete* menu item and click the "Delete All" button).
- d) Fonts consume a considerable amount of memory. If you have finished drawing any text you wish to draw you should delete the fonts from memory by selecting the "Purge" button in the Text requester. If you want to draw more text later, Professional Draw will re-load the fonts.
- e) If all else fails you should save your folio, and exit the program. Restarting Professional Draw will ensure that you have a clean slate to work with and as much memory as possible. Dot Matrix printing with Professional Draw will proceed more quickly if there is a lot of free memory. Therefore, it is a good idea to perform any or all of the above operations before printing to a Dot Matrix printer.

Customizing Program Setup

Some of the default parameters of the program can now be set on boot-up by setting the TOOLTYPES of the PDraw WorkBench icon. To change these settings single click on the PDraw icon and select 'Info' from

the 'Workbench' menu. You may add items to the TOOLTYPES by clicking on the 'ADD' button and typing one of the commands listed below into the TOOLTYPES string gadget. The supported options are:

SCREEN=WORKBENCH

Opens Professional Draw on the Workbench Screen. Since the Workbench Screen allows only 4 color Professional Draw will operate in its Black and White mode.

SCREEN=CUSTOM

Opens Professional Draw in its own Screen. On this screen Professional Draw can be run in Black and White or Color mode by entering one of the following options:

COLORMODE=COLOR

COLORMODE=BW

In addition you may choose to operate Professional Draw in either interlaced (400 vertical lines of resolution) or non-interlaced (200 lines) mode by entering one of the following options:

INTERLACE=ON

INTERLACE=OFF

You may change the internal measurement units used by Professional Draw by entering one of the following options:

UNITS=INCH

UNITS=CM

UNITS=PICA

The Default Page format may be set by choosing one of the following options:

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DEFAULTPAGE=STANDARD
DEFAULTPAGE=LEGAL
DEFAULTPAGE=A3
DEFAULTPAGE=A4
DEFAULTPAGE=A5
DEFAULTPAGE=B5

When you run Professional Draw from the Workbench by clicking on its icon it will now start with the default options you have chosen in the TOOLTYPES. If you omit any of these TOOLTYPES the default settings are:

SCREEN=CUSTOM
INTERLACE=ON
COLORMODE=COLOR
UNITS=INCH
DEFAULTPAGE=STANDARD

Be sure to click on the 'SAVE' button to save these settings once you are satisfied with them. These options can also be set when you start Professional Draw from the CLI. To set the options type:

```
1> RUN PDraw:PDraw [-w1nmp1345b] [folio_file]
```

You may use any or none of the options but any option must be preceded by a dash (-). The meaning of the options is as follows:

w - Run Professional Draw on the WorkBench Screen.
1 - Use a single plane screen.
n - use a non-interlaced screen.
m - set default units to metric (CM).
p - set default units to Picas.
l - set default page size to US Legal.
3 - set default page size to A3.
4 - set default page size to A4.

- 5** - set default page size to A5.
- b** - set default page size to B5.
- s** - set default output device to ser:
- a** - set default output device to par:

If multiple options affect the same parameter the last one will be used.

When Professional Draw is run on the Workbench screen it will open a Window to the full size of the Workbench screen. If you have set the Workbench to operate in the INTERLACE mode (through Preferences), Professional Draw will also operate in interlace mode. Professional Draw will automatically support any enhancements to the Amiga video hardware and software such as the Moniterm and A2024 full page monitors. The Professional Draw Workbench window is fully sizeable, however if you make it too small some of the gadgets along the right hand side may not be visible. The program is still fully functional and you may regain use of the invisible gadgets by making the window taller.

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15. USING WITH PROFESSIONAL PAGE

Professional Draw is designed to complement Gold Disk's *Professional Page v1.2 (or greater)* desktop publishing software. It can also be used with other page layout systems which support EPSF (Encapsulated Postscript Format). *Professional Draw* can both import and export EPSF files.

To import an EPSF file into *Professional Draw*, select the *Import EPSF* item in the Project menu.

- A file requester will appear. Select the desired EPSF file.
- The pointer will change into a rectangle. Place the rectangle on the page by clicking down the left mouse button.
- The rectangular EPSF representation may be sized by moving any of the control points, or "handles" along its edge. Information about the file appears in the top of the bounding rectangle.

To export a drawing to *Professional Page*, you must first save the drawing as a clip:

- If the drawing consists of several objects, extend select them using the SHIFT key and the *Null Pointer* tool.
- Use *Clip/Define* to copy the selected objects into a clip
- Select the *Save* item from the *Clip* menu to store the current clip list to disk.

Within *Professional Page*, create the box in which the drawing is to appear. Import the clip you created as a structured drawing, using the *Import / Professional Draw Clip* item in the *Project* menu. *Professional Page* will present you with a list of the clips defined in the file and you will be able to select clips from this list. *Professional Page* will automatically scale the drawing so that it fits inside the box.

All the editing features *Professional Page* provides for structured drawings will work with clips. For more complete information, consult the *Supplementary Manual to Professional Page*.

To export *Professional Draw* drawings to another page layout system, such as Aldus's *Pagemaker*, or Xerox's *Ventura Publisher* you must export the object to disk as an EPSF file. *Professional Draw* will save it in EPSF format, a PostScript variant that uses a simplified instruction set and an optional bitmap image. The target program must be able to import EPSF drawings. Consult your program's manual for more information.

Transferring *Professional Draw* EPSF files to a non-Amiga-based system can be accomplished a number of ways. The only way to transfer the file to a Macintosh is via modem over telephone lines or through a null modem cable directly to its serial port. This method will also work when transferring the file to any other computer that provides an RS-232C serial port.

You can also use the MS-DOS/AmigaDOS file transfer utilities provided with the Commodore A2088 Bridgeboard to copy the file from the Amiga's disks to MS-DOS disks. In addition, products such as Central Coast Software's *Dos-2-Dos* program can copy an AmigaDOS file to an MS-DOS disk using the Amiga's own floppy disk drives.

Appendix A

Trace

In addition to the *Professional Draw* program, the *Professional Draw 2.0* package includes an additional program called *Trace*. *Trace* converts bitmapped graphics (such as scanned images or pictures created with Amiga paint programs) into *Professional Draw* "Clip" files for use in *Professional Draw*, *Professional Page*, *PageSetter II*, and other Amiga programs that support the Clip format. This is accomplished through a process called "Auto-tracing".

Autotracing creates smooth lines and curves from bitmaps by replacing their jagged pixel edges with mathematically defined bezier curves and lines. An auto-traced object may be scaled up or down by any amount and still retain its smooth appearance. Autotracing is an ideal way to generate professional-looking logos from scanned images, convert scanned hand-drawn pictures into smooth, editable objects, and create a wide range of special effects from posterization to contouring.

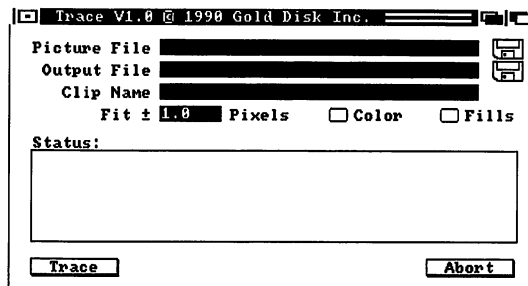
Using Trace

Like *Professional Draw*, *Trace* can be run from the Workbench by double clicking on its icon, or by typing "run PDrawFonts:Trace" from the CLI.

Trace appears as a window containing numerous gadgets on the workbench screen. These gadgets determine the bitmap to be used for the autotracing, the name of the output clip and clip file, and several tracing parameters. The gadgets are as follows:

Picture File

The name of the bitmap to be traced is entered into the Picture File Box. Alternately, you can click on the disk icon to the right of the



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the box to bring up a file requester. The name of the selected file will appear automatically in the box.

Output File

The name of the output Clip file is entered into the Output File box. As with the Picture File Box, there is a disk icon to the right of the box which may be clicked on to bring up a file requester.

Clip Name

A Clip file may contain many individual clips, so you must name the output Clip as well as the output Clip file. The clip does not have to have the same name as the Clip file. For example, an auto-traced image of a goldfish might have the clip name "Goldfish" and the file name "Fish".

Fit +/-

The Fit parameter determines how closely the curves and lines of the clip will follow the contours and edges of the original picture. The default value of 1 will provide optimum results in most cases. Smaller values (eg 0.7) will yield curves and lines that fit a little more closely, but you must exercise caution: if the fit is too "tight" the trace will tend to follow the outline of each pixel, producing an enormous number of curves. Larger values will produce fewer curves, but the fit will not be as close and thus not as accurate. Values above 20 may produce unpredictable results and are not recommended.

Color

Leaving the Color button off will cause *Trace* to trace only the outline of non-background pixels, yielding a black outline. You may of course change the outline colors in *Professional Draw*.

Turning the Color button on will cause *Trace* to produce a separate contour for each color in the picture, automatically setting the line and fill colors in the clip. While this produces an accurate rendition of color bitmaps, it tends to produce rather large files and is not recommended unless there is a specific reason for doing so.

Fills

Leaving the Fills button off will result in clips made of hairline curves with no fills. If you have turned the Color option on, the outlines will appear in the appropriate colors.

Turning fills on will produce a filled compound object for each color traced with a line thickness of zero. These separate objects fit together like a jigsaw puzzle to produce the final object. If you wish to edit individual color-objects within the image you will have to adjust all of the neighbouring objects as well. These compound objects can be extremely complex if the source bitmap contains many colors or complex shapes and may be slow in displaying within *Professional Draw*. Postscript users should also take note that there is a limit to the complexity of a contour that Postscript can handle. Contours that are too complex will not print. If this is the case, the object should be simplified with the "Delete Point" function in *Professional Draw*. This problem does not affect dot-matrix printing.

Status Window

The status window reports on the progress of the bitmap tracing, detailing the statistics of the trace as they occur.

Trace Button

Clicking on the *Trace* Button initiates tracing.

Abort

The abort button terminates the autotrace in progress.

Window Close Button

The standard window close button at the top left of the *Trace* window shuts down the Trace program.

NOTE

Trace will accept IFF bmaps of any size (memory permitting) but will not trace HAM pictures. HAM pictures should be converted to standard 32 color lo-res or interlaced pictures before tracing.

Guidelines

- Use one bit-plane pictures where possible
- When possible, simplify the original picture by reducing the number of colors and bitplanes.
- In general, the final clip produced with *Trace* will usually require some minor tweaking in *Professional Draw* to appear perfect.

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- If you are tracing line drawings, remember that the lines will be traced with an edge on each side and will appear as long ovals in the trace. To correct for this, trace with the Fill option on. The ovals will come out filled and appear as solid lines.
- Objects traced with the Fill option turned off can have fills applied in *Professional Draw*. Simply extend-select the objects you want filled, make them into a compound object, and select *Fill* from the *Object* menu. You may then select fill patterns, line weights and patterns as you wish.

Options

Trace's parameters may be pre-set from the Workbench or CLI by indicating special ToolType or CLI options.

Workbench Options

If you are running *Trace* from the Workbench by double-clicking on its icon, you can alter the default parameters for the program by changing the ToolType options. Click on the *Trace* icon to make it active, and select the *Info* option from the *Workbench* menu. A requester will appear containing, among other things, a ToolType bar. The ToolType bar contains a list of options which may be edited. The Tooltype options for the *Trace* program are :

COLOR=ON/OFF/YES/NO - ON/YES - uses as Color mode.
- OFF/NO - uses BW trace mode

FILL=ON/OFF/YES/NO - ON/YES - do automatic fill
- OFF/NO - lines only

FIT=#### - #### - Fit paramater (+/- #### pixels)

CLI Options

If you intend to run *Trace* from the CLI, all of the parameters may be indicated as options using this format:

```
run PDrawFonts:Trace [options] [BMfile1] ... [BMfileN]
```

Options are one or more of the following:

- oNAME NAME is the name of the Clip File (output file)
- nNAME NAME is the name for the Clip
- c set Color mode on
- f set Fill mode on
- p##### set the fitting parameter to +/- ##### pixels.
is a floating point. number (eg 1.5 is allowed)
- w open a status window. The default is to output status information to the CLI directly
- i ignore errors. This is only appropriate if -w options is used. Continues processing without waiting for user to confirm error condition. Default is to put error message in status window and wait for user response.

BMfile1 etc multiple BM file names to be processed with the same parameter settings. If you use multiple BM files then the -n option is meaningless and will be flagged as an error. With multiple BM files the -o option **MUST** specify a directory for the Clip files. If it's not a directory it will produce an error.

Note

- All CLI command line parameters are optional
- If no CLI parameters are given the Trace window will appear as if it had been run from its icon.
- If Trace is started from the CLI it will always output to the CLI **UNLESS** it was started with NO parameters.
- If no clip file name is specified Trace will call it *BitmapFilename.clip* and put it into the same directory as the BM file.
- If no Clip name is specified Trace will use the Bitmap file name.

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Examples

```
run PDrawFonts:Trace
```

- Runs trace with Full Window (as in WorkBench mode)
- Uses built in defaults

```
run PDrawFonts:Trace hd3:pictures/fish
```

- Traces hd3:pictures/fish without opening a window, makes a clip called hd3:pictures/fish.clip and exits. Status and errors are reported to the CLI.

```
run PDrawFonts:Trace -w -i hd3:pictures/fish hd2:stuff/sailboat
```

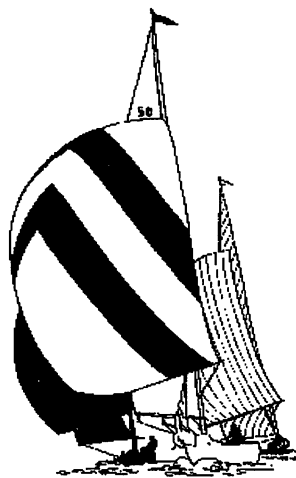
- Traces fish, sailboat in turn, opens a status window, if an error in "fish" occurs continues processing "sailboat".
- Produces files "hd3:pictures/fish.clip", "hd2:stuff/sailboat.clip"

```
run PDrawFonts:Trace -oram: -w -i hd3:pictures/fish hd3:pictures/sailboat
```

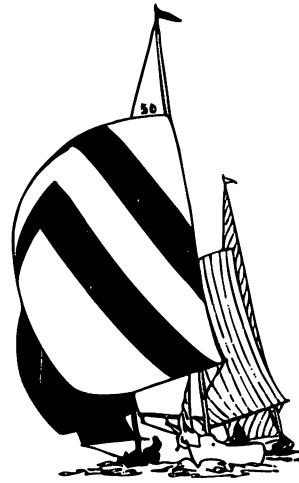
- Operation as above, but produces files ram:fish.clip, ram:sailboat.clip

```
run PDrawFonts:Trace -oram:trace_of_fish.clip -ntesting -c -f hd3:stuff/fish
```

- Traces bitmap "hd3:stuff/fish" to produce a clip file "ram:trace_of_fish.clip" with a clip named "testing" using color mode with fills.



Original IFF Bitmap



Autotraced clip from Trace

Appendix B

Technical Support

We at Gold Disk understand that users may want additional assistance in setting up the program and using its more esoteric functions, as well as ideas for their own publications. Accordingly, the Technical Support Program has been established.

Registered users will receive:

- Bug fixes and solutions to known problems (if available).
- access to our Technical Support line (416)828-5636 which is available 9:00 to 5:00 Eastern Time weekdays.

NOTE: Callers are advised to have *Professional Draw* running on a computer near the phone. Relevant files should be loaded, if possible. Exact information regarding your Amiga model number, memory size, peripherals, output devices, and concurrently running programs can speed problem solving. If you have modified the contents of your *Professional Draw* disk, in any way, please advise us.

Registered owners have the option of writing to Gold Disk for technical support. Users should include all of the above information, as well as details of the document being created, and sample output if possible.

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Appendix C

Keyboard Shortcuts

Many of the gadget and menu functions can be accessed using keyboard shortcuts. The following list contains all the menu items and sub-items which have shortcuts. Note that the same convention followed in the rest of the manual is followed here:

A X means to hold the right Amiga Key down and press key "X"

s X means to hold the Shift Key down and press key "X"

a X means to hold the Alt Key down and press key "X"

c X means to hold the Ctrl Key down and press key "X"

Menu Shortcuts

Project Menu

New	A N
Open	A O
Save	A S
Save As	A Z
Information	A I
Import Bitmaps	A B
Import EPSF	A E
Output	
Dot Matrix	F1
PostScript	F2
ThumbNail	F3
Plotter	F4
About	A ?
Quit	A Q

Page Menu

Create	s P
Load	s L
Save	s S
Delete	s D
Alter	
Current	a P
Default	a D

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Object Menu

Group	A G
UnGroup	A U
Clone	Tab
Bring to Front	c F
Send to Back	c B
Lock	c L
UnLock	c U
Delete	s Del
Make Compound Object	A M
Split Compound Object	A /
Align	
Top	A ^
Bottom	A .
Left	A [
Right	A]
Center	
Horizontal	A -
Vertical	A
Both	A +

Clips Menu

Define	A D
Draw	A C
Delete	A T
Load	A Y
Save	A V

Attributes Menu

Line Color	A L
Fill Color	A X
Line Weight	A W
Line Pattern	A P
Joins	
Miter	A 7
Round	A 8
Bevel	A 9
Butt	A 0
Fill	A F

Special Menu

Align Text to Curve	A 1
Blend	A 2
Text --> Graphic	A 3
Ellipse --> Bezier	A 4
Measure Distance	A 5

Preferences Menu

Layout Tools	a T
Draw from Center	a C
Quick Move	a Q
Memory Warning	a M
Black & White	a B
Interlace	a I
Wireframe	a W

NonMenu Shortcuts

c G	Grid visible toggle
c I	Units = INCH, Ruler = 1/8 inch
c K	Page margins toggle
c M	Units = CM, Ruler = CM
c P	Units = PICA, Ruler = PICA
c R	Ruler visible toggle
c S	Grid Snap toggle
c X	Bitmap Object visible toggle

Cursor Keys

Up	Scrolls the page position window up 75 pixels
Down	Scrolls the page position window down 75 pixels
Left	Scrolls the page position window left 75 pixels
Right	Scrolls the page position window right 1/5 page
CursorKeys+SHIFT	Scrolls in direction by 4/5 of the page
CursorKeys+CTRL	Scrolls in direction to edge of page

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Modifier Keys

ALT is a constraining key. It constrains:

Rectangle Tool	to squares
Ellipse Tool	to circles
Grid Tool	to square grids
Bezier Tool	to 45° tangent lines
Rotate Tool	to rotations of 45°
Mirror Tool	to flips of 45°
Sizing Tool	to proportional sizing

CTRL

In Selecting:	Deselects object from the Extended Select
In Editing Beziers:	Forces 2 end points to be joined when placed close together

SHIFT

In Selecting:	Adds object to Extended Select
In Moving:	Moves only one object
In Editing Beziers:	Forces previous segment to a straight line
In Distorting:	When moving control points, it forces two sides to a straight line

LEFT AMIGA - When editing Bezier curves, it forces the tangent point to be selected over the control point.

Special Keys

ESC: It is the normal termination procedure for multiple Bezier creation. It terminates object creation, moves, and edit operations.

SPACE: Refreshes the screen. When used with the Distortion Tool, it redraws the current distortion.

RETURN: Places system in the Null Pointer mode.

TAB: Stamp object during a move, or edit operation. When used with the Null Pointer, it clones the current selected object(s), dropping the new, cloned object on the page offset from the original object by a fixed distance.

SHIFT-TAB: Clones the selected object(s), dropping the new, cloned object on the page according to the Clone parameter settings. These Parameters may be set in the *Object* menu.

Other Keys

- or _	Zoom out by 2x
+ or =	Zoom in by 2x
<	Show previous page
>	Show next page
Shift Backspace	Delete selected object(s)
Shift Del	Delete selected object(s)
0	Full Page view
1	100% view
B	Send object 1 level back
F	Bring object 1 level forward

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Appendix D

Suggestions

We at Gold Disk seek to constantly improve our products. If you have a suggestion to improve the program, or a capability you would like to see supported in future versions, we are anxious to hear about it. Please drop a line to our Technical Development Department at the Following address.

Gold Disk Technical Development
P.O. Box 789, Streetsville Post Office
Mississauga, Ontario
CANADA L5M 2C2

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Appendix E

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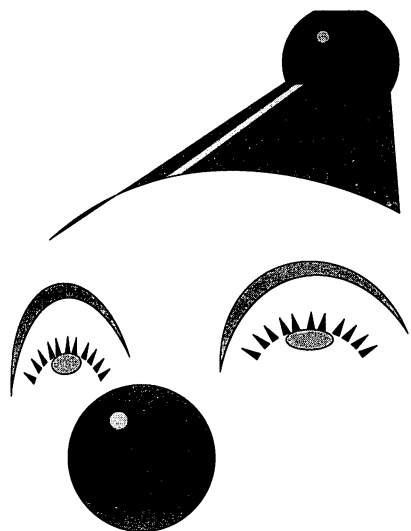
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Appendix F

Tutorial Sample Page



COME ONE!
COME ALL!

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Corrections to the *Professional Draw* manual

- Pg19: In the middle of the page when you are asked to select *Fill* from the *Draw* menu to turn on the fill attribute, you will not see the fill unless you have previously turned *Preferences/Wireframe* off.
- Pg25: In the second paragraph, to bring up the *Fill Color* requester you must select the *Attributes/Fill Color* menu item.
- Pg27: The finished TEXT Blend drawing may be found in: "PDrawFonts:tutorial/TEXTBlend.folio".
- Pg27: The finished Diner drawing may be found in: "PDrawFonts:tutorial/Diner.logo".
- Pg29: The finished Clown drawing may be found in: "PDrawFonts:tutorial/Clown.pd", not in "PDrawUtil:tutorial/Clown.pd" as stated in the manual.
- Pg30: The Clown face bitmap template may be found in: "PDrawFonts:pictures/clown.tem", not in "PDraw:tutorial/Clown.tem" as stated in the manual.
- Pg38: On line 11, when you are asked to select the "Univers" font, select "Triumvirate" instead.
- Pg38: At the bottom of the page, you are asked to set the line join type to "Angle". This should read "Miter".
- Pg39: If your Amiga has only 1 MB of total memory you may not have enough memory to print the tutorial page. If this occurs, simply select the *Preferences/Black & White* menu item. This will put *Professional Draw* into its *Black and White* mode freeing up a large amount of memory. If you still don't have enough memory to print then you should select the *Text* tool and click anywhere in the page. When the *Text* requester pops up select the *Purge* button and then click on *Cancel*. This frees up the memory used by the fonts you have previously loaded.
- Pg136: The default *Fit* parameter for the *Trace* program is 1.5, not 1 as stated in the manual.
- Pg137: *Trace* will only handle BitMaps up to 1008 x 1008 in size.

Additions to the manual

A new option has been added to the *Preferences* menu (*Preferences/Color Dither Mode*) to give you control over the color dithering in Color, WYSIWYG mode.

Gold Disk's proprietary on-screen color dithering has been enhanced to include three different dither modes for different effects. Each will show about 1000 different colors on a high resolution screen, but differ in their interlace flicker characteristics, and in how good they look on a non-interlaced screen.

These different modes are recommended for the following situations:

Smooth - This dither mode gives excellent results if you have a flicker-free display such as a MicroWay's Flicker-Fixer, or an AMIGA 3000 with a VGA monitor.

Non-Interlace - This dither mode is the best choice if you are working in non-interlace mode.

Flicker-Free - This dither mode produces a virtually flicker-free display on an interlaced monitor with only a minor loss of apparent resolution.



GOLD DISK